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## INTRODUCTION

This report summarizes results of Forest Plan monitoring and evaluation during Fiscal Year 1999 (FY99). We are continually verifying data and assumptions through monitoring. After analyzing this year's data and the data of previous years, we will continue the process to revise the *Clearwater National Forest Plan*. Until the Forest Plan revision is completed, the current Forest Plan will remain as the guiding document for the Clearwater National Forest. The current Forest Plan will be kept up-to-date during the revision process utilizing the amendment process. Amendments anticipated to be proposed are described in Chapter 4. Amendments implemented this past fiscal year are summarized in Chapter 5.

The *Monitoring and Evaluation Report* is organized into seven main sections.

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**Chapter 1. INTRODUCTION** – provides an overview.

**Chapter 2. MONITORING REPORT** – focuses on monitoring requirements by resource, in alphabetical order. Some resource reports contain more than one “**Item No.**” that refers to the numbering system (established in the Forest Plan) of items to be monitored. The numbering system is not necessarily in numerical order.

**Chapter 3. APPEALS** – lists unresolved Forest Plan appeals and project level appeals received in FY99, the status of each and the major issues associated with each. (The term “project” is used throughout this report and refers to any Forest Service activity on national forest land, such as campground construction, trail maintenance, and timber sales.)

**Chapter 4. PLANNED ACTION** – identifies actions the Forest plans to take in FY00, and beyond, to implement the Forest Plan.

**Chapter 5. IMPLEMENTED CHANGES** – discusses agreements and actions concerning ecosystem management, the Forest Plan, and amendments to the Forest Plan.

**Chapter 6. LIST OF FOREST CONTACTS** – includes acknowledgment of people who contributed to the development of this report.

**Chapter 7. FOREST SUPERVISOR APPROVAL** – signature by the Forest Supervisor.

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## II. MONITORING REPORT

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### ECONOMICS

#### ITEM NO. 1 - Quantitative Estimate of Performance Output or Services

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Frequency of Measurement: **Annual**  
Reporting Period: **Annual**

##### **Monitoring Action**

Present resource outputs and activities for FY99.

##### **Accomplishments/Findings**

See Table 1, "COMPARISON OF OUTPUTS AND ACTIVITIES WITH THOSE PROJECTED IN THE FOREST PLAN," for outputs and activities occurring in FY99, along with the percent achieved compared with Forest Plan projections.

#### ITEM NO. 17 - Document Cost of Implementation Compared With Plan Cost

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Frequency of Measurement: **Annual**  
Reporting Period: **Annual**

##### **Monitoring Action**

The Forest Budget and Finance Officer will compile actual costs for comparison with Forest Plan projected costs.

##### **Accomplishments/Findings**

See Table 2, "COMPARISON BETWEEN YEARLY EXPENDITURES (IN THOUSAND \$) AND FOREST PLAN PROJECTIONS (IN 1999 DOLLARS)," for a display of cost comparison.

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Table 1. COMPARISON OF OUTPUTS AND ACTIVITIES WITH THOSE PROJECTED IN THE CLEARWATER NATIONAL FOREST PLAN

OUTPUT or ACTIVITY	UNIT of MEASURE	FY95	FY96	FY97	FY98	FY99	First Decade Average Annual from Forest Plan	FY99 % of Forest Plan Predicted
<b>RECREATION</b>								
Developed Use	MRVDs	322.9	303.3	367.7	416	366	201.1	182%
Dispersed Use								
Wilderness <sup>1</sup>	MRVDs	35.4	35.4	37.7	40	35	121.0	29%
Non-Wilderness <sup>4</sup>	MRVDs	799.7	819.3	1,275.8	1,352	1,200	686.2	175%
<b>WILDLIFE &amp; FISH</b>								
Wildlife Habitat Improvement								
Non-structural	Acres	100	1,000	700	1700	900	1,300	69%
Fish Habitat Improvement								
Non-structural	Acres	73	95	116	135	238	219	109%
T&E Habitat Improvement								
Non-structural <sup>2</sup>	Acres	50	500	0	0	620	NA	NA
Structures	Str.	0	0	0	0	0	NA	NA
<b>RANGE</b>								
Grazing use	MAUMs	10.0	10.7	10.5	9.7	9.0	16.0	56%
Range improvement								
Non-structural <sup>3</sup>	Acres	1,200	1,000	500	300	300	7,000	4%
Structures	Str.	0	1	1	1	1	NA	NA
Noxious Weed Control	Acres	108	200	200	1150	350	380	92%
<b>MINERALS<sup>5</sup></b>								
Minerals Management	Cases	109	73	80	101	92	265	35%
<b>TIMBER</b>								
Volume Offered								
Roaded Primary	MMBF	18.4	21.3	32.3	20.5	21.2	90	23%
Roaded NICS	MMBF	10.0	10.5	21.0	6.7	2.7	10	3%
Unroaded	MMBF	2.9	0	0	3.0	0	73	0%
Volume Under Contract	MMBF	63.3	78.5	73.6	77.5	68.6	NA	NA
Reforestation							14,416	15%
Appropriated Funds	Acres	1,806	1,513	549	923	656	NA	NA
KV Funds	Acres	1,937	2,111	1,751	1,355	1,456	NA	NA
Timber Stand Improvement							1,928	41%
Appropriated Funds	Acres	827	724	54	638	782	NA	NA
KV Funds	Acres	251	119	671	123	1	NA	NA
<b>FUELS MANAGEMENT</b>								
Natural Fuels Treatment	Acres	853	429	709	2,838	3,744	NA	NA
Brush Disposal	Acres	1359	955	1,252	1,418	1,075	NA	NA
Wildland Fire Benefit <sup>6</sup>	Acres				4,385	2,411	NA	NA
<b>FACILITIES</b>								
Trail Const./Reconst.	Miles	40.4	12.1	46.8	85.3	50.1	14.0	357%
Trail Flood Repair	Miles	NA	235.2	53.2	NA	NA	NA	NA
Road								
Construction	Miles	1.5	1.8	1.0		1.3	69.0	2%
Reconstruction	Miles	109.9	72	52.0	4.1	20.5	NA	NA
					1.1			

<sup>1</sup> Figures for wilderness were based on the expectation that an Idaho Wilderness bill would classify additional wilderness on the Forest. This has not happened yet.

<sup>2</sup> A portion of the wildlife habitat improvement also benefited T&E species.

<sup>3</sup> This figure represents the acres harvested by methods that provide a temporary forage base for range resources.

<sup>4</sup> Portions of the increase in recreation visitor days may be the result of implementation of a new accounting system (INFRA) in FY97.

<sup>5</sup> Due to the difference in definitions of accomplishment in FY96, case numbers cannot be directly compared to Forest Plan estimates.

<sup>6</sup> Natural ignition managed to achieve resource benefit with approved plan.

NA - The Forest Plan did not project an average annual output for this output or activity.

Table 2. COMPARISON BETWEEN YEARLY EXPENDITURES (IN THOUSAND \$)  
AND FOREST PLAN PROJECTIONS (IN 1999 DOLLARS)

ACTIVITY DESCRIPTION	FY95	FY96	FY97	FY98	FY99	FOREST PLAN	PERCENT OF FOREST PLAN PROJECTION IN FY99
General Administration	1286	1426	1470	1284	1136	3202	35%
Fire Protection	724	1332	1345	2059	1998	1294	152%
Fire Protection Fuel	235	126	158	234	354	371	94%
Timber Sale Prep/Admin	1028	1023	832	1191	1507	3853	39%
Timber Resource Plans	10	0	0	0	0	435	0%
Timber Silvicultural Exams	174	203	202	103	61	1277	5%
Range	134	67	57	50	38	155	25%
Range Noxious Weeds	36	27	40	56	91	43	211%
Minerals	154	103	114	112	93	250	37%
Recreation	948	1248	914	965	984	1545	63%
Wildlife and Fish	887	891	710	1024	888	1619	54%
Soil and Water	529	454	489	548	732	583	124%
Maintenance of Facilities	275	218	210	237	240	717	33%
Special Uses	61	76	70	81	34	134	25%
Land Ownership Exchange	65	105	50	66	114	196	58%
Land Line Location	218	150	147	147	112	521	21%
Road Maintenance	798	710	733	838	1077	1213	88%
Trail Maintenance	350	0	252	169	316	641	49%
Co-op Law Enforcement	108	97	83	95	48	100	47%
Reforestation Appropriated	1170	752	457	700	459	2601	17%
TSI Appropriated	122	112	37	165	254	610	41%
Tree Improvement*	505	484	405	428	423	88	474%
KV Reforestation	1964	1722	1630	1156	1391	4019	34%
TSI KV	53	38	117	84	2	125	2%
Other KV	144	139	192	47	9	865	1%
Other CWFS Trust Fund	628	921	341	870	1183	983	119%
Timber Salvage Sales	3124	4700	4388	2804	2051	439	461%
Brush Disposal	671	521	518	448	384	2397	16%
Range Betterment	3	3	4	4	4	11	35%
Construction Recreation Facilities	196	-4	107	37	256	125	202%
Facility Construction	171	2	0	0	0	833	0%
Engineering Construction Supp	523	604	294	251	147	2466	6%
Construction Capital Investment	224	1055	-19	47	613	3724	16%
Trail Construction/Reconstruction	538	218	344	303	369	432	84%
Timber Purchase Road C/R	772	0	0	0	0	6599	0%
Land Acquisition	48	31	26	20	38	94	40%
Insect/Disease Sup	50	49	59	48	75	0	NA
Economic Recovery	36	75	97	71	9	0	NA
Appeals/Litigation	100	46	67	48	45	0	NA
Ecosystem Management	1169	805	661	669	1006	0	NA
Federal Highway Relief		1214	1992	959	193	0	NA
Flood Repair		801	2109	2239	100	0	NA
<b>TOTAL</b>	<b>\$20,232</b>	<b>\$22,547</b>	<b>\$21,702</b>	<b>\$20,658</b>	<b>\$18,610</b>	<b>\$44,562</b>	<b>42%</b>

\*Includes Lenore Seed Orchard management and genetic tree improvement program funds not in original Forest Plan projections.

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# EFFECTS

## ITEM NO. 22 - Effects of National Forest Management on Adjacent Land and Communities

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Frequency of Measurement: **Annual**  
Reporting Period: **Annual**

### Monitoring Action

A report will be prepared to determine concerns and goals regarding Forest management.



### Findings

**ISSUES AND CONCERNS:** Primary concerns during FY99 included the following:

#### [ROADS POLICY](#)

In January, 1998, the Washington Office announced the development of a new road building policy on national forest lands, including a proposal to suspend road construction in areas currently unroaded. Expected outcomes are that fewer roads will be built in the future, those that are built will be built to minimize environmental impacts, and roads no longer needed or that cause significant environmental damage will be removed. A temporary suspension of road building in roadless areas for an 18-month period was proposed to preserve management option while new scientific and analytical tools are developed to make better decisions about road building.

The announcement gave rise to a great deal of controversy. The environmental community largely supported the idea; timber industry interests and those who are concerned about access to the Forest objected. More than 25 open house meetings were held nationwide to explain the proposal and accept comments.

In February 1999, the 18-month moratorium on new road construction in unroaded areas went into effect. While there were no projects on the Clearwater National Forest that were affected by the moratorium, three projects would potentially be affected if the moratorium lasts longer than 18 months.



## ROADLESS INITIATIVE

On October 13, 1999, President Clinton directed the Forest Service to develop a proposal to protect more than 50 million acres of inventoried roadless areas on national forest lands throughout the nation. Public meetings and hearings were held across the country to allow people to express their opinions on the subject. The Clearwater National Forest held hearings on December 8 and December 13, 1999.

## ROADLESS AREA

Approximately 950,000 acres of the Clearwater National Forest were identified as roadless when the Forest Plan was completed in 1987. Since then, approximately 1.6% of this area has been developed with roads and timber harvest. However, in FY99, there was no development in the roadless area.

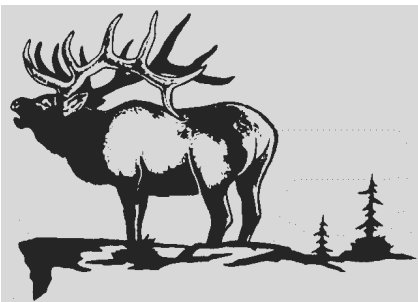
## ROAD OBLITERATION

In 1997 the Forest began an aggressive effort to obliterate old logging roads that are no longer in use, or that are in danger of failing and causing damage to streams. Most of the roads targeted for obliteration are roads that were built in the 1950s and 1960s. They were built very close together to accommodate logging systems of the day. Most of these roads have been abandoned; yet it is these roads that are causing landslide problems today.

While most people understand and support the need to obliterate roads, some are concerned that they may be losing access to the forest. However, in actuality, there will be little change in access for forest users because most roads obliterated are in areas where there are numerous other access roads.

Several field trips to road obliteration projects were offered to the public in recent years. In August 1999, 55 people, mostly representatives of state and federal agencies, attended a field trip to Squaw Creek drainage, the site of many jammer road failures during the winter of 1996. Many of the failures reached Squaw Creek, adding silt to this anadromous fisheries stream. Extensive roading had been done in this drainage years ago to harvest timber. Field trip attendees were impressed with the extent of road obliteration work the Forest has done in this drainage, and continues to do.

## ELK HABITAT INITIATIVE



In some portions of the Clearwater Basin, Idaho's renowned elk herd is in serious decline, attributed largely to loss of the shrubby browse favored by elk. The natural balance of forage for all animals was interfered with when fire suppression began in the 1940s. Experts agree that habitat decline, hunting pressure, predators, and harsh winters are the primary causes.

The Clearwater Basin Elk Habitat Initiative was begun in 1998 to address the problem and find solutions. It is a collaborative effort with state and federal agencies, and many private sector partners participating. A self-organized citizens group, called Clearwater Elk Recovery Team, is very active in working on solutions.

A focused effort is being applied in the North Fork subbasin since that is the area in greatest need of habitat improvement for elk. A team of specialists has completed a watershed analysis on August 16, 1999. The team is now working on an environmental impact statement to address the problems identified. Several wildlife burns have already taken place to improve elk habitat.

## LEWIS AND CLARK BICENTENNIAL OBSERVANCE

Thousands of visitors are predicted to visit Idaho to celebrate the 200th anniversary of the Corps of Discovery's voyage. In preparation for these visitors, the Clearwater National Forest is making plans for enhancing visitors' experience with an improved visitor center at Lolo Pass, interpretive signs along the Highway 12 corridor, and informative publications.

A strategy for visitor use on the Lolo Trail (the actual route of Lewis and Clark) was developed by a team from the Clearwater National Forest, the National Park Service, and the Nez Perce Tribe. A permit system will be in effect during periods of high visitor use; the Lolo Trail has significant cultural and historical resources, and is too rugged and sensitive to withstand large numbers of people. In response to public comments, the permit system was revised in 1999.

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## SPECIAL PROJECTS/PROGRAMS

### RURAL COMMUNITY ASSISTANCE PROGRAM

The Forest continues to work with local communities to assist in applying for funds through the Farm Bill's Rural Community Assistance Program. In 1999, grants were awarded to the following:

- **Latah County - \$5,000 (economic strategy to develop non-timber forest products; and**
- **the City of Weippe - \$19,188 (rehabilitate and improve Fraser Park).**

### RECEIPTS TO COUNTIES

Twenty-five percent of the money received from use of national forest resources is returned to counties on which national forest land is located. The Clearwater National Forest contributed \$680,026 in FY99.

### NORTH LOCHSA FACE ECOSYSTEM ASSESSMENT PROJECT

This landscape-scale assessment involves 128,000 acres and is located between Highway 12 and the Lolo Motorway, extending east to the Fish Creek drainage, and west to the Pete King drainage.

The study included extensive dialogue with a wide spectrum of public interests in order to better understand the various viewpoints in regard to this land. Public meetings, open houses, interviews, field trips and workshops were held. A citizen group met with the interdisciplinary team to help draft a strategy for motorized and non-motorized use of trails and roads. The Draft Environmental Impact Statement (EIS) was published in May 1997. The Final EIS was delayed when concern over proposed prescribed burning was expressed. To provide an opportunity for further dialogue with the public on this issue, a public hearing on the use of prescribed fire was scheduled for February 12, 1998. The final EIS was issued in 1999. The decision is anticipated in 2000.

### LOLO PASS VISITOR CENTER

Construction is underway for an improved visitor and interpretive center at Lolo Pass. The Forest has been working together with the Idaho and Montana Departments of Transportation and interested members of the public on the project. In addition to visitor center improvements, access to the site will be made safer and parking will be improved. The improved area will be slightly larger than it currently is, and all buildings will retain the current rustic design. The site should be completed in 2001.

## LANDSCAPE ASSESSMENTS

The Forest continues to work on landscape assessments in preparation for the Forest Plan revision. Landscape assessments display information about the vegetation, soils, wildlife, fisheries, stream conditions and all other resources. They also portray human uses of the land, past and present. The public is invited to share their knowledge of the area and their ideas for management as each assessment is conducted. This is in addition to the formal public involvement activities that will occur during the revision phase.

### ITEM NO. 23 - Effects of Other Agencies on the National Forest

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Frequency of Measurement: **Annual**

Reporting Period: **Five Years**

#### Monitoring Action

A report will be prepared to determine effects of the activities of other agencies on the Forest.

#### Accomplishments/Findings

The Clearwater National Forest works together with many agencies. They include:

◆ **IDAHO DEPARTMENT OF FISH AND GAME (IDF&G):** This department participates with the Forest regularly on projects affecting the fish and wildlife resource on the Forest. Department personnel also enforce IDF&G laws on the Forest. The Forest's contribution to this partnership consists of habitat maintenance and enhancement.

◆ **IDAHO, LATAH AND CLEARWATER COUNTY SHERIFFS' DEPARTMENTS:** Through a cooperative agreement, these departments patrol campgrounds and forest roads, and assist Forest Service law enforcement officers.

◆ **NATURAL RESOURCES CONSERVATION SERVICE:** This agency monitors precipitation stations on the Forest.

◆ **COORDINATED RESOURCE MANAGEMENT GROUP:** Several state agencies, private landowners, timber industry and the Forest Service are working together on a plan to improve the water quality and riparian condition of the Jim Brown Creek watershed, located just west of national forest land near Weippe. Group members include Idaho Department of Lands, Idaho Fish and Game Department, Idaho Department of Environmental Quality, the Natural Resources Conservation Service, Potlatch Corporation, several private landowners in the area and the Clearwater National Forest.

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# FIRE

## Goal

Prevent, suppress and manage fire commensurate with resource values to be protected, while recognizing the role of fire in the ecological processes.

## Strategy

- Analyze organizational needs using the National Fire Management Analysis System (NFMAS) to determine the most cost efficient fire suppression organization and methods. Develop a Fire Management Organization Spreadsheet (5100-2), to show the level of fire protection being provided as per current year budget level.
- Continue to stress **SAFETY** as the primary focus in all fire management activities with special emphasis on the aviation program, firefighting, and recurrent training in "**Standards for Survival**".
- Continue to evaluate fire protection boundaries to promote economic and efficient fire suppression.
- Continue fire use as a tool when its use is determined to accomplish management objectives for fuel hazard reduction, site preparation, wildlife habitat improvement and ecosystem management through prescribed fire and wildland fire use programs.
- Provide a continuous cadre of specialists with the knowledge and experience to accomplish prescribed fire programs and participate as members of the wildland fire Incident Command System.
- Ensure sufficient brush disposal funds will be collected from timber sales to treat activity fuels created by each project, where deemed necessary to treat those fuels.
- Implement "*Ecosystem Management*" concepts into fire management programs. Look at ways of how fire can be utilized and incorporated into sustaining healthy ecosystems, concentrating on restoration of fire adapted ecosystems.
- Continue to support and be involved in achieving the goals of habitat improvement and the restoration of elk under the Clearwater Elk Initiative.
- Continue to implement the North Idaho Smoke Management Airshed guidelines and coordinate prescribed burning and wildfire smoke impacts with this group and adjacent cooperators.
- Continue the "*Minimum Impact Suppression Tool*" concept (*MIST*) for lands under the protection of the Clearwater National Forest.
- Continue use of appropriate management responses under Federal Wildland Fire Policy as necessary to meet fire management objectives.

## Monitoring Action

The Fire staff will annually prepare and implement a Fire Management Plan (FMP) that will provide specific direction for accomplishing the fire management objectives outlined in the Forest Plan.

## Accomplishments/Findings

The Forest continued implementation of the Federal Wildland and Prescribed Fire Management Policy. This policy was adopted nationally in 1998 and incorporates nine guiding principles and provides consistent fire management direction for all federal agencies. Training sessions explaining national fire management policy and the links to the *Clearwater National Forest Plan* were held for agency personnel, fire cooperators, and the public, specifically opportunities for fire use and management to support the Clearwater Elk Initiative and other aviation and fire management goals.

The Forest led a coordinated effort with the Bitterroot and Nez Perce National Forests to update the **Selway-Bitterroot Wilderness Wildland Fire Use Guidebook**. This longstanding program of prescribed natural fire or wildland fire use in the Selway Bitterroot Wilderness was updated to reflect changes made in National Fire Management Policy. This revision was approved in the late spring of 1999, and was reprinted as the **Selway-Bitterroot Wilderness Wildland Fire Use Guidebook**. Wildland fire use is currently permitted on about 260,000 acres of wilderness and approximately 150,000 acres of non-wilderness lands within this plan.

- **The Forest had eleven fires that met the criteria for wildland fire use.**
- **These fires burned a total of 1,415 acres in 1999.**

The **Clearwater Fire Management Unit Guidebook** was completed in May 1999. This plan will utilize ignitions from natural sources in a safe and cost efficient manner to protect or enhance resources on the Forest. This expands wildland fire use to non-wilderness lands on the Forest consistent with direction in Appendix D of the *Clearwater National Forest Plan*. The fire management unit is largely within the North Fork Ranger District.

- **Wildland fire use will be permitted on 515,788 acres and not allowed on 121,056 acres.**
- **During the 1999 fire season, 11 fires met the prescriptive and risk criteria and burned a total of 996 acres.**

Three landscape scale prescribed fires (ignited by managers) were cooperatively funded by the Rocky Mountain Elk Foundation and the Forest Service. These included:

- **Lightning Creek (825 acres) on the North Fork Ranger District,**
- **Bear Skull (720 acres) on the North Fork Ranger District, and**
- **East Bridge II (530 acres) on the Lochsa Ranger District.**



In the area protected by the Clearwater National Forest, 151 fires were initially attacked. Several of these required additional resources and time to suppress. There were 22 ignitions managed for the benefits of wildland fire within the Selway-Bitterroot Wilderness and the Clearwater fire management unit. On national forest lands protected by Idaho Department of Lands and Clearwater Potlatch Timber Protective Association (CPTPA), 4 fires were successfully initially attacked.

The Forest maintained an excellent safety record.

*MIST* guidelines were used for all lands protected by the Clearwater National Forest. *MIST* guidelines are specifically written to protect resource values within wilderness, research natural areas, cultural sites and any other sensitive areas from fire suppression impacts.

## FUNDING

The 1999 fire season was slightly above average on the Clearwater National Forest in terms of numbers of fires. The Forest was successful at meeting the fire protection standards outlined in the *Clearwater National Forest Plan* given the level of activity and funding provided for the protection of resources.

Funding to protect Forest resources from fire is based on the *National Fire Management Analysis System*, an analysis tool designed to determine the most efficient level of fire protection budget. This analysis is based on 10 years of fire history, fire weather, and past organizational levels. It then establishes the most cost efficient mix of personnel, equipment, and budget needed to provide these resources. The program was last updated in 1997 and the most cost efficient level was determined to be \$2,454,559.

- **The Forest received a wildland fire protection budget of \$1,773,000 for FY99, which is 72% of the most efficient level.**

The 1999 fire season was below average on the Clearwater National Forest in terms of annual acres burned. The 10-year average (1985-1994) acres burned were 3,182.

- **In FY99, the Forest burned 2,451 acres.**

The 10-year average (1985-1994) number of fires was 171.

- **In FY99, the Forest had 177 fires.**

The 1999 fire season began slowly with relatively few fire starts prior to late July. The energy release component rose above the 97<sup>th</sup> percentile for a 10-day period in late July and early August. Rainfall amounts in August were above normal and inhibited large fire spread. September and October were generally dry with the energy release component rising above the 90<sup>th</sup> percentile for 12 days in late September.

## WILDFIRE DETECTION

Figure 1. FIRE DETECTION

The Global Positioning System (GPS), which locates fires by latitude and longitude within an accuracy of 10 meters from aircraft, was used for fire detection. The type of detection, number of fires located and percentage of the total number of fires detected is displayed in Figure 1.

DETECTOR	NUMBER OF FIRES	PERCENT
Lookout	47	26.5
FS Aircraft	86	48.6
Other Aircraft	9	5.1
FS Employee	28	15.8
Other	5	2.9
Permittee	2	1.1
Cooperator	0	0.0

Figure 2. NUMBER OF FIRES BY FIRE SUPPRESSION ZONE ON THE FOREST

DISTRICT	# OF FIRES BY SIZE CLASS						
	¼ or less Acres	.26–9.99 Acres	10–99.9 Acres	100–299.99 Acres	E	F	G
Palouse	2	1					
North Fork	64	5			2		
Lochsa	68	15					
Powell	31	3				1	

## FIRE SUPPRESSION

The Clearwater National Forest is responsible for the protection of approximately 1,702,137 acres of land. The Idaho Department of Lands and CPTPA protects about 159,636 acres of these lands. All 6 of the fires that occurred on national forest lands protected by these two agencies were control strategy wildfires and are part of the total number of fires shown under the CONTROL SUPPRESSION STRATEGY section below.

Wildfires were attacked and suppressed in accordance with the *Fire Management Action Plan* using the control, contain and confine suppression strategies. The intent of the *Clearwater National Forest Plan* standards and guidelines were met by implementing these different suppression strategies. Each fire was assessed as to its fire potential and location within each land allocation. A suppression strategy was assigned to best fit each fire situation.

## CONTROL SUPPRESSION STRATEGY

This strategy is used to complete a control line around a fire, any spot fires and any interior unburned islands to be saved; to burn out any unburned areas adjacent to the fire side of the control line; and cool down all hot spots that are an immediate threat to the control line until the line can reasonably be expected to hold under foreseeable conditions.

- **This strategy was selected for 155 fires resulting in 40 acres burned.**

## WILDLAND FIRE USE

The management of naturally ignited wildland fires to accomplish specific pre-stated resource management objectives in predefined geographic areas outlined in fire management plans.

- **This management option was selected for 22 fires within the Selway-Bitterroot Wilderness and the Clearwater fire management unit; 2,411 acres burned.**
- **11 were within the Selway Bitterroot Wilderness and burned 1,415 acres and**
- **11 were within the Clearwater Fire Management Unit and burned 996 acres.**

## STATISTICAL CAUSE

Figure 3. NUMBER OF FIRES BY CAUSE – FY99

The Clearwater National Forest had five person/miscellaneous-caused fires that burned a total of 11 acres. Figure 3 displays the causes of fires for FY99.

Extensive support was provided by Clearwater National Forest employees on incidents in many parts of the nation with large amounts of time committed to California, Nevada, Montana, Alaska, and many forests in the southern region.

CAUSE	# FIRES	PERCENT	ACRES
Lightning	172	97.2	2,439.85
Equipment	0	0.0	0.0
Smoking	0	0	0
Campfire	2	1.1	10.3
Debris Burning	2	1.1	0.2
Children	0	0	0
Fireworks	0	0	0
Miscellaneous	1	0.6	0.5
Arson	0	0	0
<b>TOTAL</b>	<b>177</b>	<b>100.0</b>	<b>2,450.85</b>

The Forest utilized 42 smokejumpers on 17 fires. Retardant aircraft delivered 850 gallons of retardant to a fire on the Clearwater National Forest during the 1999 fire season. Additional retardant was utilized on a boundary fire within the Idaho Department of Lands' protection.

Within the Clearwater/Nez Perce Forest Fire Zone a total of 648.5 hours were flown by helicopters, 13 different helicopters were used for a total of 244 contract days, 1,090 personnel were transported, 151,885 pounds of cargo moved, and 108,735 gallons of water were dropped on fires.

## FUELS REDUCTION

Brush disposal trust funds were used to treat 1,025 acres following timber harvest activities. This treatment was 85% of a 1,200-acre target with a budget of \$500,000. Unusually dry weather in September prevented meeting the assigned target. Post brush disposal treatment monitoring indicated that fuel reduction objectives are being met.

Hazardous fuel treatment dollars in the amount of \$460,000 were used to treat 3,744 acres or 63% of the 5,917-acre target. Total hazardous fuel treatment acres, which combine hazardous fuels and wildland fire use

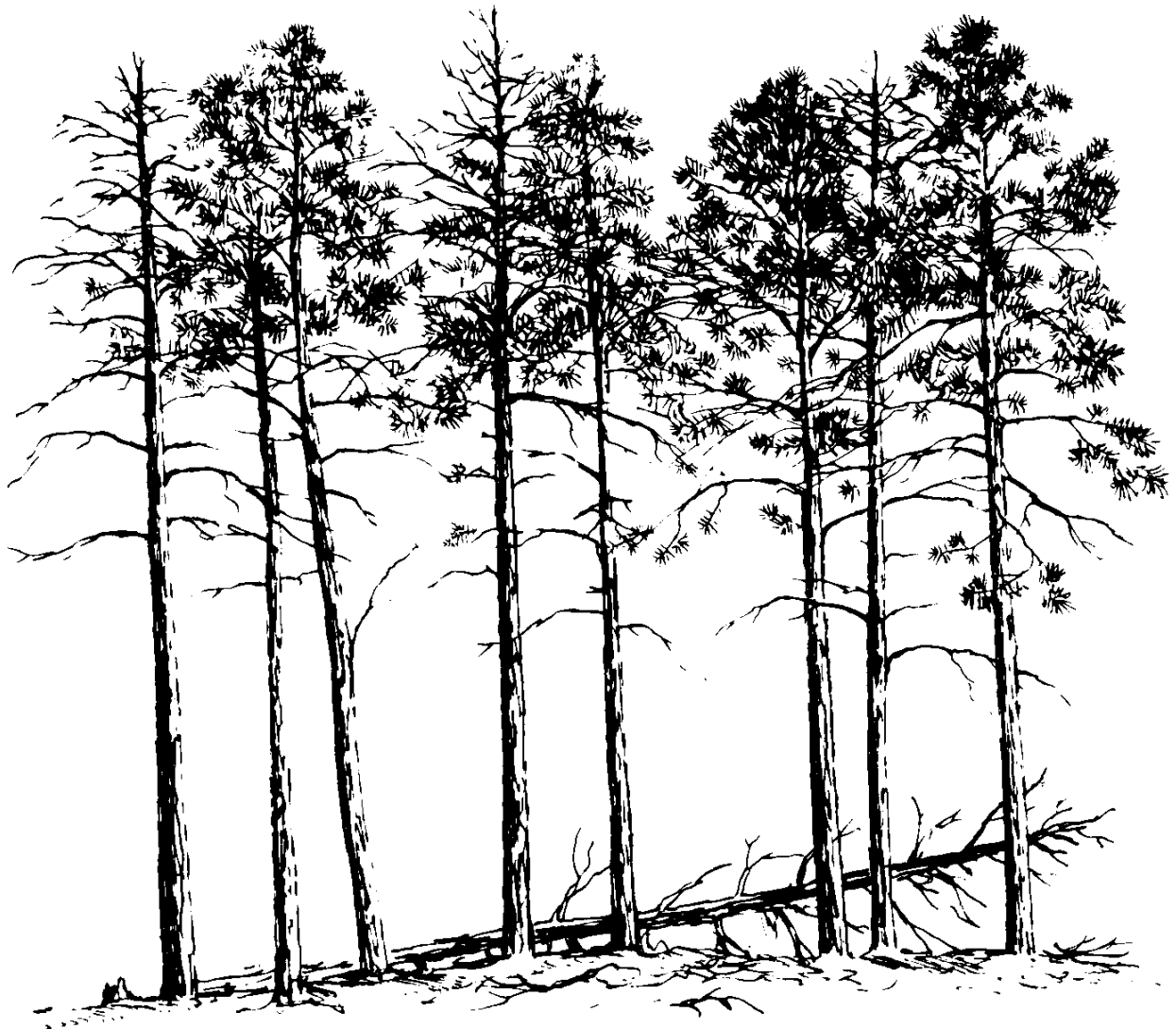


acres, were 6,155 acres through the end of fire season. Detailed monitoring documents were prepared for the Lightning Creek and Bear Skull Burn Projects on the North Fork Ranger District. Post-burn monitoring indicates that project objectives were met.

Planning for landscape scale burn projects continued for the North Lochsa Face and Middle Black Environmental Impact Statements. Additional smaller project planning was also accomplished.

## AIR QUALITY

Prescribed burning was accomplished during the spring and fall burning periods. Smoke management from prescribed fires was managed within the guidelines of the North Idaho Airshed Group. No specific air quality monitoring was done within the Forest.



# FISHERIES

## Goal

Manage the Forest's fisheries streams to achieve optimum levels of fish production by rehabilitating and improving streams on developed areas of the Forest and by maintaining high quality existing habitat.

## Strategy

- Provide management direction during the planning and implementation of activities. Identify and implement rehabilitation projects on the Forest.
- Emphasis in habitat improvement will be directed toward the sensitive species of westslope cutthroat trout, bull trout, steelhead trout and spring chinook salmon.
- The Forest will focus the challenge cost-share program on anadromous fish habitat improvement associated with fisheries in the Columbia River Basin and the direction of the Northwest Power Act. The Forest will develop cost-share partners and projects.
- The Forest fisheries biologist will direct development of fisheries expertise on ranger districts. Information regarding district projects and their results are available for anyone interested.
- The Forest will emphasize the implementation of the *Columbia River Basin Anadromous Fish Habitat Management Policy and Implementation Guide (PIG)* with priorities placed on monitoring, inventory and National Environmental Policy Act compliance. The purpose of *PIG* is to provide guidance for implementation of anadromous fish habitat management policy for the three Forest Service Regions with lands in the Columbia River Basin: the Northern, Pacific Northwest, and Intermountain Regions.

## Accomplishments/Findings

**PACFISH** • No formal review by the PACFISH Implementation Review Team was conducted on the Forest in 1999. Since 1995, the Forest has been conducting the PACFISH/INFISH monitoring programs in conjunction with the annual *Best Management Practices (BMP)* reviews to determine project implementation compliance and effectiveness of resource protection measures on selected projects. In 1999, the Forest conducted reviews on four projects to determine compliance with Forest Plan direction as amended by PACFISH. The Forest is currently summarizing results from these reviews. Additional project monitoring was scheduled in 1998, but the selected projects were not completed; reviews are rescheduled for 2000.

**INFISH** • The Forest also completed a review of three projects within the North Fork Clearwater River drainage to determine compliance with Forest Plan direction as amended by INFISH. Similar to the PACFISH reviews, additional project monitoring was scheduled in 1999, but the selected projects were not completed and the reviews were rescheduled for 2000.

## Item No. 8 - Water Quality and Stream Condition for Fisheries and Non-Fisheries Beneficial Uses

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Frequency of Measurement: **Annual**  
Reporting Period: **Annual**

Information for Non-Fisheries is included in the section entitled "SOIL AND WATER" for WATER QUALITY AND STREAM CONDITION FOR NON-FISHERIES BENEFICIAL USES.

### Monitoring Action

The Forest fisheries biologist will coordinate the monitoring of critical anadromous and inland fish streams to determine habitat conditions and population trends. District field crews will measure key habitat characteristics, such as cobble embeddedness (the degree to which streambed gravel has been infiltrated by sediment).

Streams supporting both anadromous and inland fish were monitored during FY99. The FY97 monitoring program was expanded and intensified to include more monitoring of anadromous and inland fish streams that were impacted as a result of the high flows, flooding and landslides within the Palouse River, Lochsa River and the North Fork Clearwater River drainages. In FY99, this intensity was maintained or expanded in most drainages.

### Accomplishments/Findings

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#### FOREST OVERVIEW

**STREAM INVENTORY TARGETS** • Approximately 102 miles of anadromous and inland streams were inventoried.

**IMPROVEMENT TARGETS** • Completion of 48 miles of fisheries habitat improvement was accomplished. Project targets, as measured in acres, (238 acres) for anadromous and inland streams were met.

The 1999 stream improvement projects were completed on various streams throughout the Forest. As in 1997, the 1999 watershed restoration (primarily road obliteration projects) made up the majority of the restoration work in drainages affected by the 1995/96 floods. The Nez Perce Tribe assisted the Forest with funding and personnel on several road obliteration and riparian projects. In conjunction with the road obliteration work, slide areas and stream banks adjacent to road crossings within headwater streams were stabilized and revegetated to improve stream substrate conditions in downstream fish-bearing streams. These projects are expected to provide long-term improvements in summer and winter-rearing habitat for bull trout, steelhead trout, westslope cutthroat trout and spring chinook salmon. Riparian fencing projects involving new fences and fence replacement and maintenance were also completed to meet Forest Plan *Riparian Management Objectives (RMOs)*.

**STREAM TEMPERATURE MONITORING** • The stream temperature-monitoring program was expanded in 1998, and maintained in 1999. Stream water temperatures were measured at over 230 sites on the various streams across the Forest. New sites were located primarily within Lochsa River and North Fork Clearwater River tributaries. Streams will be monitored for at least five consecutive years.

**FISH POPULATION AND HABITAT MONITORING** • Fish population numbers and/or stream substrate conditions were monitored within 20 drainages in the Palouse River, Lolo Creek, Lochsa River and North Fork Clearwater River watersheds. Personnel from the Idaho Department of Fish and Game, Nez Perce Tribe, U.S. Fish and Wildlife Service, and Idaho Department of Health and Welfare - Division of Environmental Quality also monitored fish populations within various streams on the Forest; these monitoring projects were coordinated with the Forest programs to avoid unnecessary duplication of monitoring efforts.

## Item No. 31 - Anadromous Fisheries

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Frequency of Measurement: **Annual**  
Reporting Period: **Annual**

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### POTLATCH RIVER WATERSHED

**WATERSHED STATUS** • No natural or anthropogenic events occurred in the Potlatch River watershed during 1999 that caused changes to the aquatic environment. Instream conditions and riparian conditions did not show any substantial changes due to climatic, spring stream flows, erosion (sediment due to surface and mass wasting events), and management activities (i.e. roads, vegetative treatments, mining and grazing). Various field reviews and monitoring activities support the conclusion that habitat conditions are similar to 1998 conditions. Based on these assessments, the presence/absence and relative abundance of fish populations within the watershed are assumed to be similar to conditions observed during the 1994-95 surveys. However, anadromous fish numbers may vary annually due to influences outside the watershed and fish supplementation efforts by the Nez Perce Tribe involving coho salmon.

**HABITAT IMPROVEMENT** • The fisheries enhancement and riparian fencing projects within the Potlatch River drainage assisted in the improvement and/or protection of approximately four miles of stream.

**RIPARIAN FENCING** • Fences on ten permanent riparian enclosures (six along the East Fork Potlatch River, one on Ruby Creek, one on the East Fork Big Bear Creek, and two on ponds within the Corral Creek watershed) were maintained in 1999.

A "Hi-Tensile" electric fence (2.3 miles) constructed in 1998 was maintained along Cougar Creek to protect one mile of stream and 12 acres of riparian area. Another five miles of "Hi-Tensile" fence constructed in 1997 was maintained along the West Fork Potlatch River and Feather Creek to protect 1.7 miles and 0.75 miles of stream and riparian areas respectively. Three temporary electric fences were installed and maintained on Corral Creek and Hog Meadow Creek to protect the 1993 stream reconstruction projects along two miles of stream. Approximately one mile of "Hi-Tensile" fence was constructed in 1999 to protect about 0.5 miles stream and adjacent riparian area along Nat Brown Creek.

**ROAD OBLITERATION** • Fisheries funds were used to assist in the obliteration of three miles of road along the mainstem of the Potlatch River near Boulder Creek campground. The road prism was converted to a trail and disturbed areas revegetated to improve the riparian conditions along the river.

**HABITAT MONITORING** • The mainstem Potlatch River and various tributaries have been designated a "*water quality limited segment*" (*WQLS*) by the State of Idaho. The primary pollutant of concern is sediment. Stream water temperatures are also a concern in the Potlatch River drainage. Past, current, and future monitoring within the Potlatch River drainage will emphasize substrate conditions in terms of sediment and stream water temperatures. Stream inventories of all fish-bearing streams within the Potlatch River drainage on national forest lands have been completed; no additional surveys were scheduled for 1999.

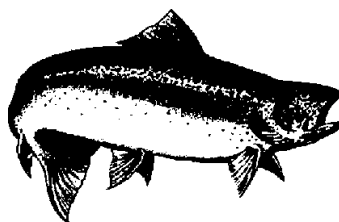
**WATER TEMPERATURE MONITORING** • Stream temperature monitoring was conducted at eight sites on six streams in the Potlatch River drainage in 1999 to evaluate habitat conditions for steelhead trout. From 1990-1996, the Forest has collected temperature data on selected streams within the Potlatch River drainage to determine if temperatures meet Forest and State standards, locate temperature problems, identify recovery trends, and prioritize riparian recovery efforts. Seven years of thermograph data indicate that most of the streams have higher summer stream temperatures than the desired objectives for salmonid rearing. In most years, all temperature sites within the Potlatch River system exceeded the *desired future condition* (DFC) for temperatures during the spring spawning period and all temperature sites within the Potlatch River system exceeded the State spawning standard of 13°C during the spring.

Comparison of the 1999 stream temperature data from the monitoring sites and the desired maximum temperatures as defined for the "*low fishable*" standard on the Forest Plan reveal that:

**The mainstem Potlatch River, West Fork Potlatch River (two sites) and lower Nat Brown Creek did not meet the DFC (less than 20°C) for steelhead trout rearing. Cougar Creek, Feather Creek and upper Nat Brown Creek met the DFC for steelhead trout rearing.**

In 1999, two sites, mainstem Potlatch River (at Little Boulder Creek) and lower Nat Brown Creek, exceeded the State standard for cold-water biota of the daily maximum of 22°C and the maximum daily average of 19°C; stream temperatures at Nat Brown Creek exceeded the standard only one day. State temperature standard of 13°C or below for the spring spawning period (for steelhead trout) was not met at any of the seven streams.

**FISH POPULATION MONITORING** • Steelhead redds have been monitored twice a year (April and May) in the East Fork Potlatch River since 1992. These surveys have shown a consistently low number of redds from three to eight. During the 1999 spawning period, two surveys conducted in April found one redd.



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**LOLO CREEK WATERSHED**

**WATERSHED STATUS** • No natural or anthropogenic events occurred in the Lolo Creek watershed during 1999 that caused changes to the aquatic environment. Instream conditions and riparian conditions did not show any substantial changes due to climatic, spring stream flows, erosion (sedimentation due to surface and mass wasting events), and management activities (i.e. roads, vegetative treatments, mining and grazing). Various field reviews and monitoring activities support the conclusion that habitat conditions are similar to 1998 conditions. Based on these assessments, the presence/absence and relative abundance of fish populations within the watershed are similar to conditions observed in previous years. However, anadromous fish numbers may vary annually due to influences outside the watershed and fish supplementation efforts by the Nez Perce Tribe involving spring chinook salmon.

**HABITAT IMPROVEMENT** • Restoration and enhancement work regarding the aquatic resources was primarily associated with watershed restoration activities such as road obliteration and road maintenance work. As part of a challenge cost share agreement with the Nez Perce Tribe, the Forest completed road obliteration projects within the Musselshell Creek and Eldorado Creek drainages. These activities will provide direct and indirect benefits to the substrate and fish habitat conditions in the Lolo Creek drainage.

**ROAD OBLITERATION** • As in 1998, habitat improvement efforts within the Lolo Creek drainage continued in conjunction with watershed restoration crews from the Nez Perce Tribe with erosion control activities associated with road obliteration work. Fisheries provided funds to obliterated seven miles of road within the Musselshell Creek and Eldorado Creek drainages to improve spawning and rearing habitat for steelhead trout and westslope cutthroat trout. Long-term benefits to instream conditions are expected in seven miles of Musselshell Creek, two miles in Eldorado Creek, one mile each in Cedar and Snow Creeks (tributaries of Eldorado Creek).

**RIPARIAN FENCING** • Fence maintenance on existing riparian enclosures was completed in 1998.

**HABITAT MONITORING** • The mainstream Lolo Creek and nine tributaries have been designated a WQLS by the State of Idaho. Primary pollutants of concern are sediment and water temperature. Past, current, and future monitoring within the Lolo Creek drainage will emphasize substrate conditions in terms of sediment stream water temperatures. Fish-bearing streams inventories within the Lolo Creek drainage have been completed on national forest lands between 1991-94. Resurveys of specific streams are planned every five to ten years depending on stream conditions and management proposals. Approximately 20 miles of the mainstem of Lolo Creek were resurveyed during the summer of 1998 to assess any changes in habitat stream conditions from surveys conducted in 1988 and 1993. Survey results were not available for last year's *Monitoring and Evaluation Report*; a summary is provided below.

Surveys noted that the fish habitat within Lolo Creek drainage were generally similar to conditions documented during the 1993 survey. No changes in overall substrate conditions were observed; the 1998 overall cobble embeddedness levels of 41.5% for the 20 miles of stream was basically the same as the 1993 level of 41.0%. Of the 49 stream reaches, 25 reaches showed decreases and 24 showed increases in cobble embeddedness levels. The substrate conditions do not meet the DFC for the appropriate Forest Plan standard. Average cobble embeddedness levels within 12 reaches of Lolo Creek met the desired conditions for a "*high fishable*" standard of 30-35% cobble embeddedness. The remaining stream reaches exhibited average cobble embeddedness levels of 36% to over 61%; although these levels are higher than the desired conditions, the extent the levels are within or outside natural conditions have not been assessed at this time.

**WATER TEMPERATURE MONITORING** • A cooperative arrangement to monitor selected key tributaries within the Lolo Creek system was initiated in 1990 between the Nez Perce Tribe and the North Fork Ranger District. In general, past monitoring data has indicated that stream temperatures in Lolo and Musselshell Creeks exceeded the desired criteria (16-17°C) by several degrees and maintained these high temperatures for extended periods of time. However, data shows that the number of days in which these systems exceeded the standard has decreased since 1990.

Stream temperatures were monitored throughout the summer at 10 sites on 9 streams within the Lolo Creek drainage to evaluate habitat conditions for steelhead trout, spring chinook salmon, westslope cutthroat trout and bull trout. The following data is for Lolo Creek tributaries as the data recorder for the mainstem Lolo Creek as not been retrieved for data download. Comparison of 1999 stream temperature data from the monitoring sites and the desired maximum temperatures as defined for appropriate standards in the Forest Plan revealed that:

- 1) The desired steelhead trout rearing temperature of 17°C was met at two streams: Dutchman and Camp Creeks.
- 2) The desired spring chinook trout rearing temperatures of 17°C was not met at the current or potential spring chinook salmon streams (Yoosa, Eldorado and Musselshell Creeks). However, Yoosa Creek exceeded the desired temperature only one day.
- 3) The desired westslope cutthroat trout rearing temperature of 16°C was met at Dutchman and Camp Creeks.
- 4) The desired bull trout rearing temperature of 12°C or below was not met at any of streams.
- 5) The desired westslope cutthroat trout rearing temperature of 18°C or below (moderate fishable standard) was met in Gold and Mud Creeks.

Overall, water temperatures of streams within the Lolo Creek drainage were under the State standard for cold-water biota; water temperatures did not exceed the daily maximum of 22°C and the maximum daily average of 19°C. This temperature data does not include the mainstem Lolo Creek and lower Eldorado Creek, which have shown water temperatures higher than the State standard in past years. The State standard of 13°C for the spring spawning period (steelhead trout) was met at Dutchman Creek only. However, Camp Creek and Yoosa Creek exceeded the standard for only three and four days respectively. The State standard of 13°C for the spring period for westslope cutthroat trout was not met at any of the monitoring sites. For bull trout, none of the streams met the recommended fall spawning temperature of 9°C or below.

**FISH POPULATION MONITORING** • For the last ten years, population assessments were conducted by snorkeling and using document trends in Lolo Creek; 15 permanent transects established in 1988 were sampled (10 log weir pools and 5 control sites). The Nez Perce Tribe conducted fish population assessments in the mainstem of Lolo Creek and other tributaries such as Yoosa Creek, and Eldorado Creek. In 1997, the largest occurrence of spring chinook salmon spawning in 25 years took place throughout the mainstem Lolo Creek drainage. In 1999, the 15 permanent transects were sampled; the low numbers of steelhead juveniles observed followed the projected trends when compared to 1994-1996 population information. However, the numbers of spring chinook juveniles were very high.

The 1999 steelhead age 1+ densities continued to be very low; densities of 0.95 fish/100 m<sup>2</sup> observed in 1999 were slightly above the densities of 0.33 fish/100m<sup>2</sup> documented by the Forest in 1998. The increase in numbers is most likely a result better juvenile survival due to the high spring stream flows in 1998. Densities of spring chinook juveniles averaged approximately one-half of the densities observed in 1998. The high

densities in 1998 were most likely the result of record number of adults and resultant redds during the 1997 spawning season. In 1999, densities of spring chinook juveniles (age 0+) averaged 35.7 fish/100m<sup>2</sup> which is substantially higher than the 0.21 fish/100m<sup>2</sup> documented by the Forest in 1996 and lower than the 78.7 fish/100m<sup>2</sup> documented in 1998. The higher than average densities are most likely due to

- (1) primarily the out plants of over 250,000 spring chinook in the mainstem Lolo Creek by the Nez Perce Tribe in July 1999, and
- (2) to a lesser degree, the higher redds counts in 1998 (31) as compared to years prior to 1997.

As part of the continuing Idaho Supplemental Studies being conducted in the Lolo Creek drainage, the Nez Perce Tribal Fisheries Department completed the 1999 Lolo Creek spring chinook spawning ground surveys. These surveys were conducted in the main stems of Lolo, Eldorado, Musselshell, and Yoosa Creeks.

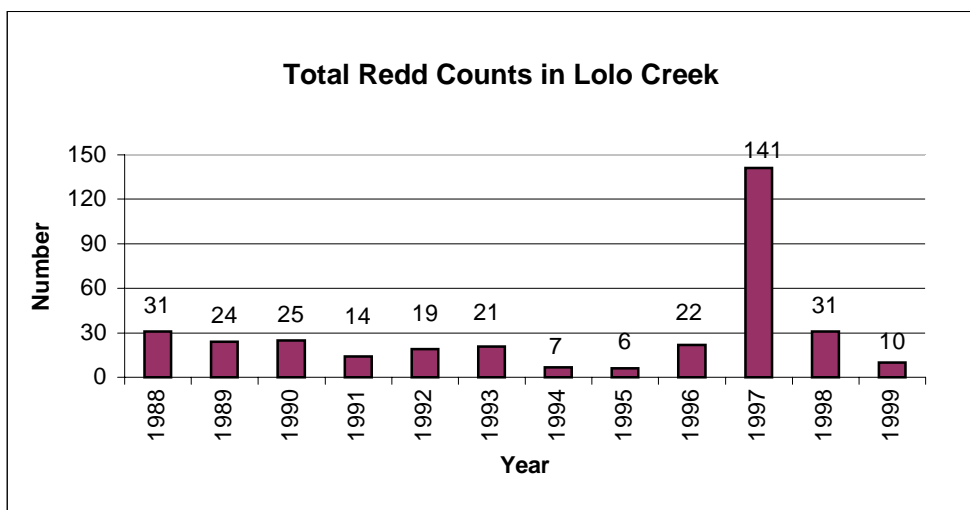
Results of the 1999 surveys indicated that a total of 10 redds were located within the Lolo Creek drainage; all 10 were located within mainstem Lolo Creek. No redds were observed in the Eldorado Creek, Musselshell Creek, and Yoosa Creek drainages (Figure 1). The number of redds within the Lolo Creek drainage was about 7% of the 1997 redd count and much lower than the 1988-98 average of 31 redds. The primary reasons for the decrease in the number of redds included

- (1) very low redd counts in 1994 and 1995,
- (2) no spring chinook juveniles (smolts) were released in the Lolo Creek drainage during 1994-96 and
- (3) fewer spring chinook hatchery adults were out planted in 1999.

**Figure 1.**

**Comparisons of spring chinook salmon redd counts observed within the Lolo Creek drainage during 1988-1999.**

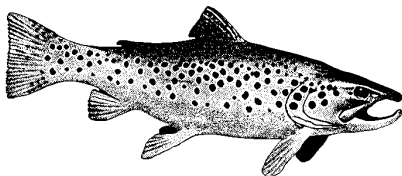
(Data provide by IDF&G (1988-89), Nez Perce Tribe (1992-99) and U.S. Forest Service (1990-1991)).





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## OROFINO CREEK WATERSHED



**WATER TEMPERATURE MONITORING** • Due to migration barriers in lower Orofino Creek, streams within the Forest's boundary are considered nonanadromous (no potential for steelhead trout or spring chinook salmon); only water quality and habitat conditions related to resident fish (i.e. westslope cutthroat trout) are monitored and analyzed. As in 1996-1998, Orofino Creek, at the Forest Service boundary, was monitored for summer stream temperatures in 1999. The desired cutthroat trout rearing temperature of 20°C was met. State standards for cold-water biota were also achieved; water temperatures did not exceed the daily maximum of 22°C and the maximum daily average of 19°C. State standards of 13°C for the spring spawning periods (for westslope cutthroat trout) was not met at this monitoring site.

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## MIDDLE FORK CLEARWATER RIVER WATERSHED

**WATERSHED STATUS** • No natural or anthropogenic events occurred in drainages within the Middle Fork Clearwater River watershed during 1999 that caused changes to the aquatic environment. Instream conditions and riparian conditions did not show any substantial changes due to climatic, spring stream flows, erosion (sedimentation due to surface and mass wasting events), and management activities (i.e. roads and vegetative treatments). No major fires occurred in 1999. Various field reviews and monitoring activities support the conclusion that habitat conditions for most drainages are similar to 1998 conditions. Based on these assessments, the presence/absence and relative abundance of fish populations within the watershed are assumed to be similar to conditions observed in previous years. However, anadromous fish numbers may vary annually due to influences outside the watershed.

**HABITAT MONITORING** • Stream inventories of all fish-bearing streams within the Middle Fork Clearwater River drainage have been completed in 1996; no additional habitat surveys were scheduled for 1999.

**WATER TEMPERATURE MONITORING** • Stream temperatures were monitored throughout the summer at the mouth of Swan, Little Smith and Big Smith Creeks to evaluate habitat conditions for steelhead trout and westslope cutthroat trout. During 1997, the Forest collected water temperature data from these streams to determine temperature problems and to prioritize riparian recovery efforts. Comparison of the 1999 stream temperature data from the Big Smith Creek and Swan Creek sites (Little Smith Creek data recorder has not been retrieved) and the desired maximum temperatures as defined for the "*high fishable*" standard in the Forest Plan revealed that

- the desired cutthroat trout rearing temperature of 17°C was not met at either stream, and
- the desired steelhead trout rearing temperature of 16°C was not met at either stream.

All three streams are relatively small and do not contain any significant spring chinook rearing habitat.

Overall, water temperatures at the Little Smith Creek and Big Smith Creek sites were under State standard for cold-water biota; water temperatures did not exceed the daily maximum of 22°C and the maximum daily average of 19°C. The State standard of 13°C for the spring spawning periods for steelhead trout was not met at any stream; however, temperatures in Big Smith Creek exceeded the standard only two days. All three streams do not contain spring chinook spawning habitat. For bull trout, none of the streams have been designated potential bull trout spawning habitat; none met the fall spawning temperature of 9°C that has been recommended in various research documents.

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## LOCHSA RIVER WATERSHED

**WATERSHED STATUS** • No natural or anthropogenic events occurred in the Lochsa River watershed during 1999 that caused changes to the aquatic environment. Instream conditions and riparian conditions did not show any substantial changes due to climatic, spring stream flows, erosion (sedimentation due to surface and mass wasting events), and management activities (i.e. roads and vegetative treatments). No major fires occurred in 1999. Various field reviews and monitoring activities support the conclusion that habitat conditions for most drainages are similar to 1998 conditions.

Monitoring efforts have shown some improvement and degradation in specific drainages impacted by the 1995-1996 floods. Based on these assessments, the presence/absence and relative abundance of fish populations within the watershed are assumed to be similar to conditions observed in previous years. However, anadromous fish numbers may vary annually due to influences outside the watershed.

**HABITAT IMPROVEMENT - LOWER LOCHSA RIVER AREA** • In 1999, restoration efforts in the Lower Lochsa River area were concentrated in the Pete King Creek drainage. Fisheries habitat funds were used to complete one mile of road obliteration in the upper Walde Creek drainage. The road was a major source of sediment into Walde and Pete King Creeks. The project is expected to provide long-term improvements to substrate conditions for 1.5 miles and 5.0 miles of Walde and Pete King Creeks, respectively.

**HABITAT IMPROVEMENT - UPPER LOCHSA RIVER AREA** • As in 1996-1998, the Forest concentrated their efforts on watershed restoration activities within drainages affected by the November 1995 flood. Forest personnel worked with watershed restoration crews from the Nez Perce Tribe with erosion control activities associated with road obliteration work in the Upper Lochsa River area.

**HABITAT MONITORING** - Fish-bearing streams within the Lochsa River drainage were completed in 1997; surveys scheduled for 1999 were limited to resurveys of the Deadman Creek and Walton Creek drainages. These resurveys totaled approximately 20 miles of stream. Substrate-monitoring projects in the Pete King Creek and Deadman Creek drainages continued.

**HABITAT MONITORING - LOWER LOCHSA RIVER AREA** • The Deadman Creek drainage resurvey was completed in 1999 to assess any changes in habitat conditions that were documented during the 1993 and 1999 surveys. Overall, habitat within the lower 2.2 miles of the mainstem Deadman Creek (downstream of the West Fork Deadman Creek) did not show any substantial changes between the surveys. Substrate conditions within the mainstem of Deadman Creek have shown improvement as average cobble embeddedness levels decreased from 51% to 47% between 1993 and 1999. The current average cobble embeddedness level is still substantially above the DFC (30-35%) for the *“high fish”* Forest Plan standard. Substrate conditions showed similar trends in the mainstem Deadman Creek between the West Fork Deadman and the Middle Fork Deadman Creeks.

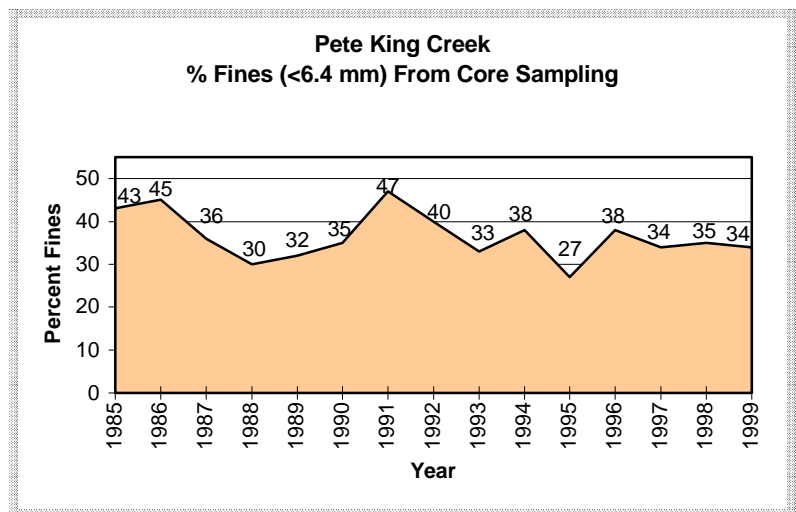
Comparison of the 1993 and 1999 survey data from the entire mainstem Deadman Creek showed a slight increase in the area of pools, but these pools showed a lower quality rating and fewer were considered primary pools. Channel and bank stability conditions did not change and remained at a high quality. Large acting woody debris levels increased slightly over these six years.

Overall, habitat within the lower four miles of the West Fork Deadman Creek showed substantial changes between the surveys. Substrate conditions within the West Fork Deadman Creek have shown a substantial degradation as average cobble embeddedness levels increased from 33.8% to 51.6% between 1993-1999. The cause(s) for the increase is not currently known. Due to higher gradient and larger substrate size materials (i.e. boulders), measurements of cobble embeddedness are difficult. Partial increase may be attributed to sampling error. High stream flows were discounted as a contributing factor as bank stability remained at an excellent level. The amount of acting debris in the stream channel increased by 40%; cobble embeddedness levels usually increase as woody debris levels increase. However, the majority of the increase is assumed a function of the watershed condition.

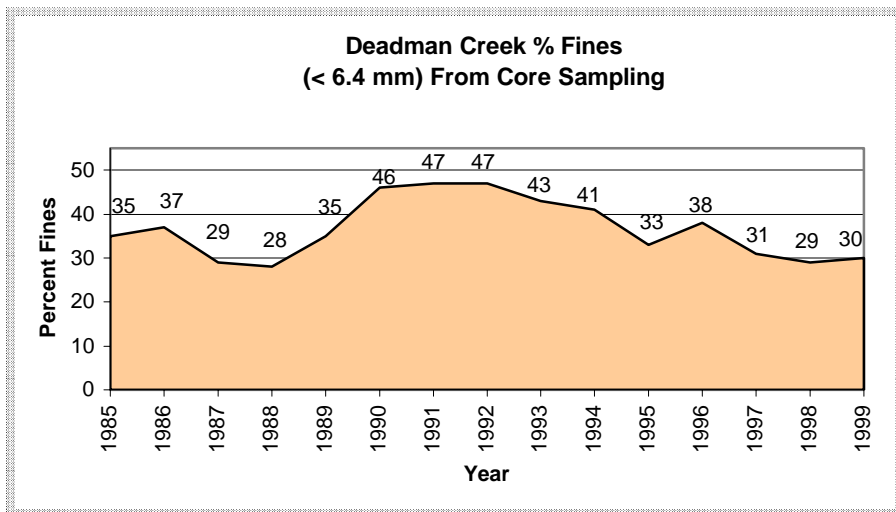
Although the Deadman Creek drainage did not experienced a substantial number of erosional impacts (i.e. road failures, debris torrents etc) in 1995-1996 as other Lochsa River drainages (e.g. Pete King Creek, Squaw Creek, Papoose Creek), the Forest identified four events that contributed sediment into the various streams in the drainage. Additional landslides may have occurred in the drainage during the last several years. Follow-up monitoring regarding selected instream areas will be conducted in 2000 to validate the 1999 survey results and to locate any erosion sources that need rehabilitation.

The substrate-monitoring project continued in Pete King and Deadman Creeks to determine trends of sediment (% fines by depth) in steelhead trout spawning areas. This monitoring measures the substrate particles that are collected by digging a core into the stream bottom at permanent stations. These stations have been monitored for the last 15 years. Preliminary analysis of the data indicates that the percentage of sediment (fine sediment < 6.4 mm) within the substrate of both streams have been ranging between 27% and 45% fines. After showing a decline in 1997, Pete King stabilized in 1998 and 1999 around 34-35% fines (Figure 2). Deadman Creek showed a declining trend in percent fines between 1996 and 1998, but stabilized at around 29-30% fines in 1999 (Figure 3). At both streams, the levels are still above the desired conditions of 22-24% for the *"high fishable"* Forest Plan standard.

**Figure 2. Comparison of average percent fines (< 6.4 mm) for years 1985-1999 at permanent substrate monitoring sites in lower Pete King Creek within the Lochsa River drainage.**



**Figure 3. Comparison of average percent fines (< 6.4 mm) for years 1985-1999 at permanent substrate monitoring sites in lower Deadman Creek within the Lochsa River drainage.**



In Pete King Creek, substrate conditions revealed that percent fines decreased slightly from 35% to 34% between 1998 and 1999 respectively. This leveling off follows a decrease of 38% to 34% between 1996 and 1997 following a sharp increase after the 1995-96-flood event.

At the Deadman Creek stations, substrate conditions showed percent fines slightly increasing from 29.0% to 29.5% between 1998 and 1999 respectively. This leveling off follows a

decrease of 38% to 31% between 1996 and 1997 following a moderate increase after the 1995-96-flood event. Comparison of the percent fines between two time periods, 1990-1994 and 1995-1999, show a significant decreasing trend over the last ten years ( $p < 0.05$ ).

**HABITAT MONITORING - UPPER LOCHSA RIVER AREA** • Resurveying of the Walton Creek drainage to assess changes in habitat conditions documented in 1993 and 1999 surveys, was completed in 1999. Overall, habitat within the lower 2.2 miles of the mainstem Walton Creek (downstream of the Plum Creek Timber Company, section 11) showed several substantial changes between the surveys. Substrate conditions within Walton Creek showed degradation; average cobble embeddedness levels increased from 28% to 37% between 1993 and 1999. Current average cobble embeddedness level is slightly above the DFC (30-35%) for the *“high fish”* Forest Plan standard. Rearing habitat showed an overall improvement as the amount of pool habitat doubled from 13% to 27%; these pools had a slightly higher quality rating and the number of primarily pools increased by 40%. Channel and bank stability conditions did not change and remained at a high quality. Large acting woody debris levels increased slightly.

The overall decrease in substrate quality in Walton Creek is likely a function of natural hydrologic conditions within the upper watershed. Although recent land management practices in the lower portion of the watershed (directly upstream of the survey area referenced above) may have contributed some sediment, major contributions from management related activities have not been documented during monitoring efforts (see RIPARIAN AREAS section for more information).

**MAINSTEM LOCHSA RIVER** • No habitat monitoring was conducted in the Lochsa River in 1999. Changes in substrate and pool conditions will be documented during surveys scheduled for 2000 and 2002.

**WATER TEMPERATURE MONITORING** • Stream temperatures were monitored throughout the summer at 90 sites on 71 streams within the Lochsa River drainage. Temperature units for 11 streams are still deployed in the field; data is unavailable. Stream temperature monitoring was initiated at other sites, but equipment failures prevented data collection. The Forest has been collecting water temperature data from

1990-98 to determine temperature problems and prioritize riparian recovery efforts. In past years, thermograph data revealed that temperatures exceeding the desired rearing temperature criteria by several degrees were maintained for extended periods of time. Comparison of 1999 stream temperature data with desired maximum temperatures as defined for the *"high fishable"* and *"no effect"* standard in the Forest Plan revealed that:

- **(1) The desired steelhead trout rearing temperature of 15°C (no effect) was met at three streams out of the 12 streams monitored with a *"no effect"* standard.**
- **(2) The desired steelhead trout rearing temperature of 17°C (high fishable) was met at 25 streams out of the 34 streams monitored with a *"high fishable"* standard.**
- **(3) The desired spring chinook trout rearing temperature of 15°C (no effect) was not met at White Sand Creek. Data recorders for Crooked Fork Creek and Brushy Fork Creek have not been retrieved.**
- **(4) The desired westslope cutthroat trout rearing temperature of 13°C (no effect) was not met at any site.**
- **(5) The desired westslope cutthroat trout rearing temperature of 16°C (high fishable) was met at 13 streams out of the 17 streams monitored with a *"high fishable"* standard.**
- **(6) The desired bull trout rearing temperature of 12°C or below was met at one stream only: West Fork Squaw Creek.**

Overall, water temperatures of 70 streams within the Lochsa River drainage were under the State standard for cold-water biota; water temperatures did not exceed the daily maximum of 22°C and the maximum daily average of 19°C. The only stream exceeding the State standard was the mainstem Lochsa River (at Eagle Mountain Creek); the mainstem Lochsa River upstream at the Walton Creek site met the standard. The temperature data does not include the lower mainstem Lochsa River.

The temperature data has shown water temperatures higher than the State standard in past years. The State standard of 13°C for the spring spawning period (steelhead trout) was met at 49 streams. The State standard of 13°C for the spring period for westslope cutthroat trout was met at 19 streams. For bull trout, only four streams met the recommended fall spawning temperature of 9°C or below: Cooperation Creek, Spring Creek, Fern Creek and Parachute Creek. Seven streams that had stream temperatures that exceeded 9°C for less than five days included: Twin Creek, West Fork Squaw Creek, Shotgun Creek, Savage Creek, Colt Creek, Cliff Creek, and Shoot Creek. Bull trout spawning was documented in three of the eleven streams that met the 9°C desired spawning temperature criteria.

### FISHERIES POPULATION MONITORING

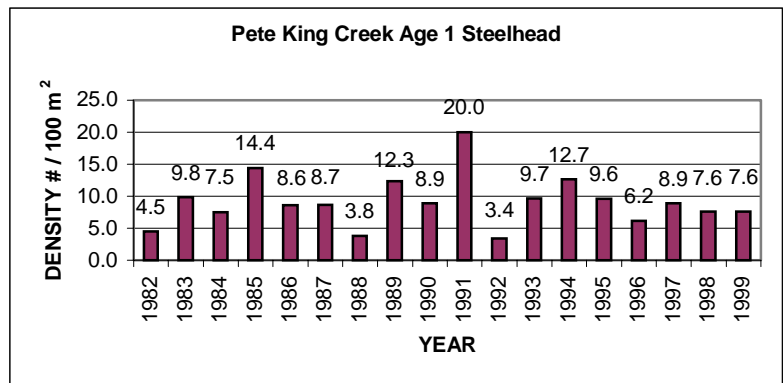
**LOWER LOCHSA RIVER AREA** • In 1999, twenty-eight fish population stations were snorkeled on six streams within the Deadman Creek drainage in conjunction with the habitat surveys. Steelhead trout, westslope cutthroat trout and brook trout were observed during the surveys. As in previous years, fish population monitoring of selected streams continued at established long-term monitoring stations. Fish species present in some or all of the study streams included spring chinook salmon, steelhead/rainbow trout, westslope cutthroat trout, mountain whitefish and sculpin. No bull trout were observed during the surveys.



Monitoring of age 1+ steelhead trout juveniles within the Pete King Creek, Deadman Creek, Fish Creek and Hungry Creek drainages was conducted over a number of years to assess the trend in steelhead production within the lower Lochsa River drainage (Figures 4-10). Due to the above average steelhead trout production within these streams, especially the Fish/Hungry Creek drainages, monitoring trends in these drainages are most likely the best scenario to assess the health of the wild steelhead trout populations within the Lochsa River system.

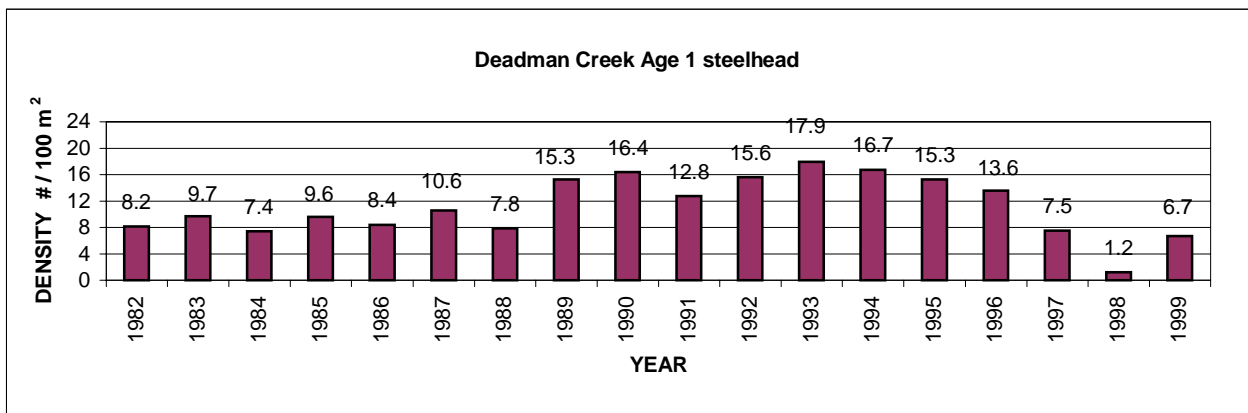
Steelhead trout populations have not rebounded to the desired densities of juveniles (age 1+) >15 fish/100m<sup>2</sup> according to data collected in 1999. While higher stream flows during the summer months in 1997 may have contributed to the lower densities observed at the monitoring stations, stream flows during 1999 were mostly average to below average, which tend to concentrate fish in smaller areas. In either case, most of the monitoring sites are pool habitats, which normally have the highest densities of steelhead (age 1+ and age 2+) especially during periods of low stream flows. Average steelhead trout densities of age 1+ juveniles increased slightly at the upper Fish Creek, lower Hungry Creek and upper Hungry Creek sites, but these were relatively small increases and do not reflect any major upward trends. Deadman Creek was the only drainage that indicated a substantial increase from 1998; steelhead trout densities rebounded in Deadman Creek to 1997 levels. This increase in Deadman Creek observed in 1999, followed a substantial decrease between 1997-98. Low densities at Pete King Creek and middle Fish Creek sites did not change from the 1998 densities. Densities data over the last five years indicates that steelhead trout populations may have leveled off in Pete King Creek and middle Fish Creek.

**Figure 4. Comparison of the average densities (#/100m<sup>2</sup>) of juvenile steelhead trout (age 1+) observed for survey period 1982-1999 at permanent snorkeling stations on Pete King Creek in the Lochsa River drainage by the Clearwater National Forest.**

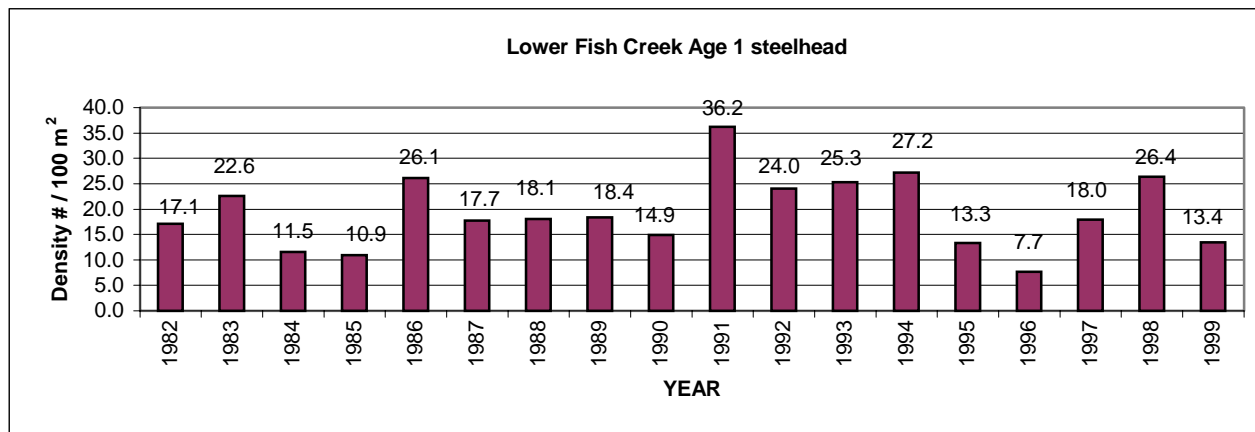


Only one site, lower Fish Creek, showed a decrease in average densities. This was considered a substantial decrease of nearly 50%. Although the survey data showed some increases or leveling off in densities, the overall data still suggests a downward trend in steelhead trout production at these streams.

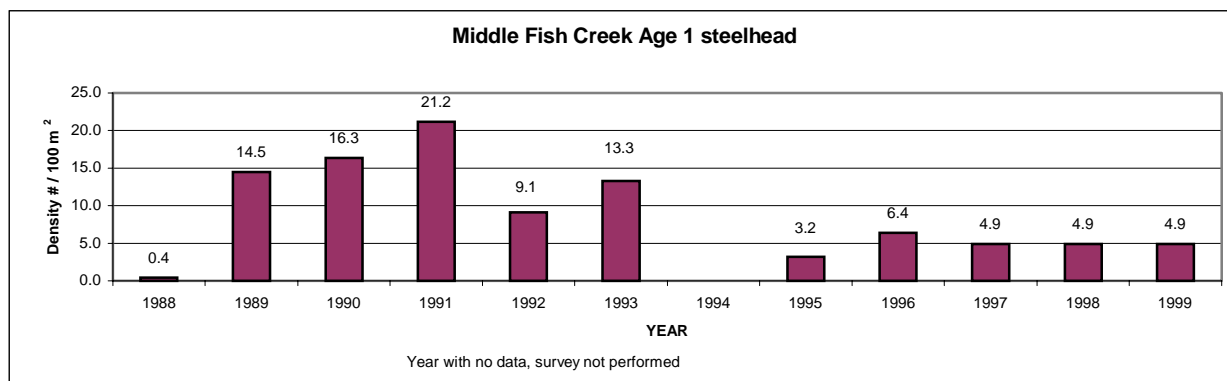
**Figure 5. Comparison of the average densities (#/100m<sup>2</sup>) of juvenile steelhead trout (age 1+) that were observed for survey period 1982-1999 at permanent snorkeling stations on Deadman Creek in the Lochsa River drainage by the Clearwater National Forest.**



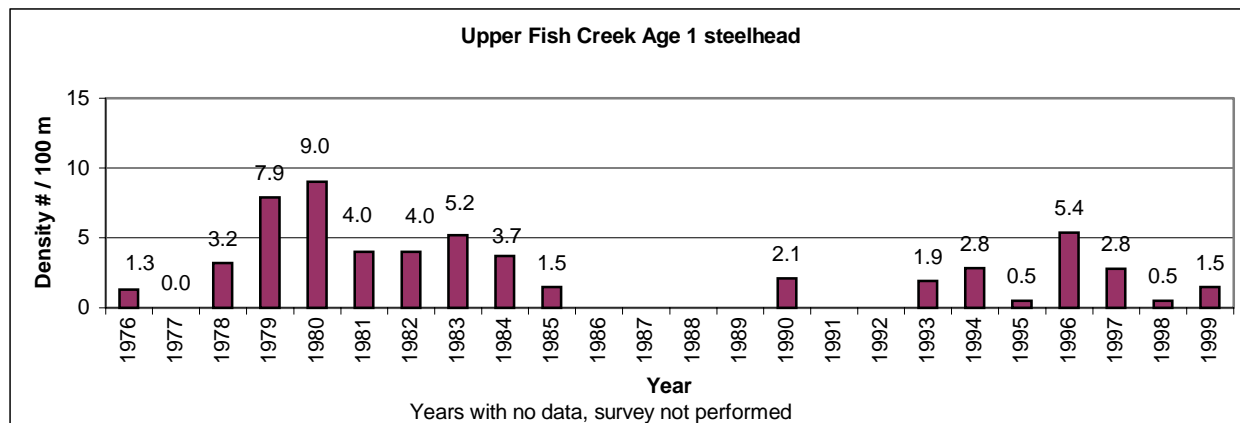
**Figure 6. Comparison of the average densities (#/100m<sup>2</sup>) of juvenile steelhead trout (age 1+) that were observed for survey period 1982-1999 at permanent snorkeling stations on lower Fish Creek in the Lochsa River drainage by the Clearwater National Forest.**



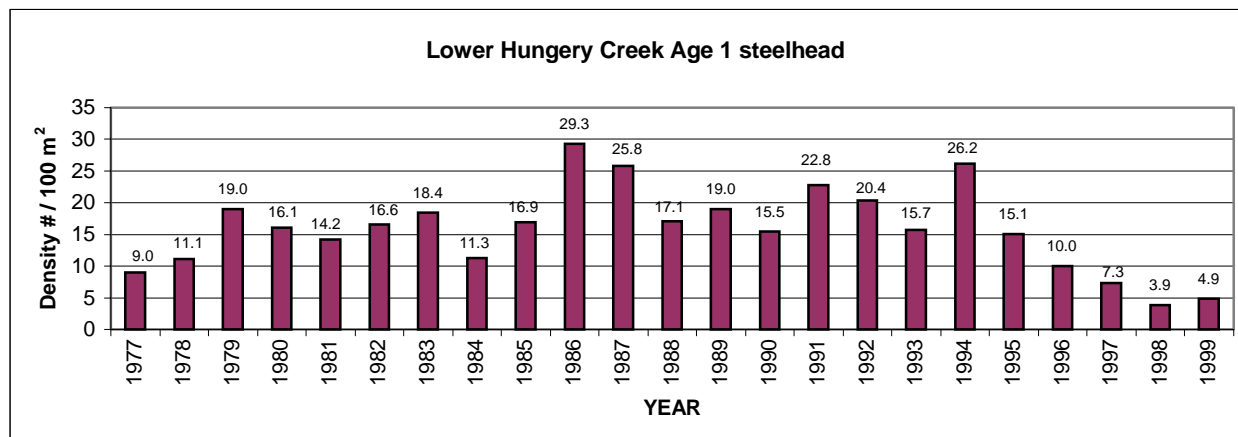
**Figure 7. Comparison of the average densities (#/100m<sup>2</sup>) of juvenile steelhead trout (age 1+) that were observed for survey period 1988-1999 at permanent snorkeling stations on middle Fish Creek in the Lochsa River drainage by the Clearwater National Forest.**



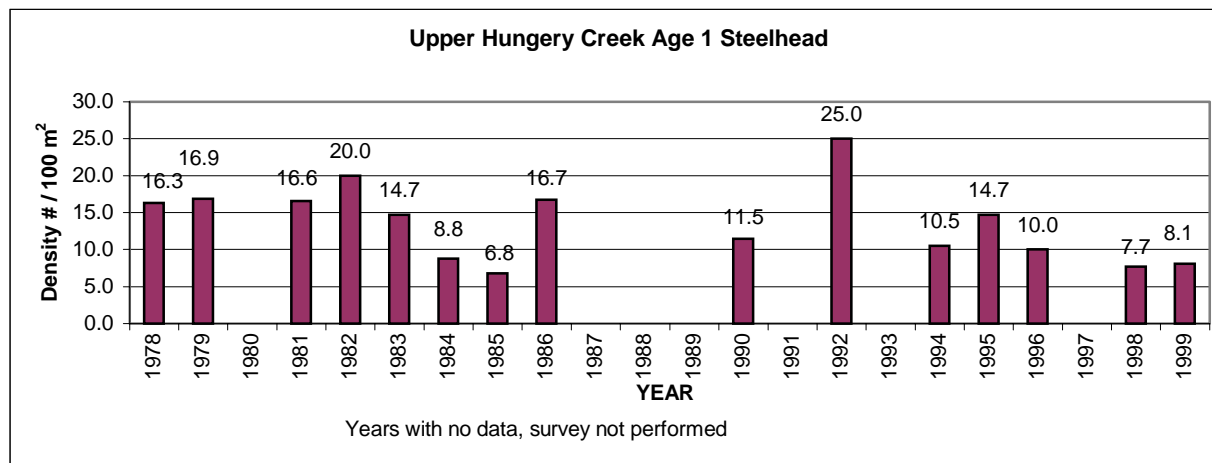
**Figure 8. Comparison of the average densities (#/100m<sup>2</sup>) of juvenile steelhead trout (age 1+) that were observed for survey period 1976-1999 at permanent snorkeling stations on upper Fish Creek in the Lochsa River drainage by the Clearwater National Forest.**



**Figure 9. Comparison of the average densities (#/100m<sup>2</sup>) of juvenile steelhead trout (age 1+) that were observed for survey period 1977-1999 at permanent snorkeling stations on lower Hungry Creek in the Lochsa River drainage by the Clearwater National Forest.**



**Figure 10. Comparison of the average densities (#/100m<sup>2</sup>) of juvenile steelhead trout (age 1+) that were observed for survey period 1978-1999 at permanent snorkeling stations on upper Hungry Creek in the Lochsa River drainage by the Clearwater National Forest.**



**UPPER LOCHSA RIVER AREA** • In 1999, twelve fish population stations were snorkeled within Walton Creek in conjunction with the habitat surveys. Steelhead trout were observed only in the lower two stream reaches while westslope cutthroat trout were the only salmonid found in the upper 10 stream reaches. Juvenile bull trout were also observed in the lower reaches.

In 1999, fish population monitoring of selected streams continued. Fish species present in some or all of the study streams included chinook salmon, steelhead/rainbow trout, westslope cutthroat trout, bull trout, mountain whitefish and sculpin. In 1989 and 1990, permanent monitoring sites were established on nine streams in the Upper Lochsa River drainage: Crooked Fork, Brushy Fork, Pack, Walton, Warm Springs, Papoose, Squaw, Post Office, and Weir Creeks. Fish population monitoring was scheduled on an alternate year basis. In 1998, established monitoring sites on Walton Creek were completed. A comparison of fish density data for Walton Creek during the 1995, 1997 and 1998 sampling years showed relatively stable fish densities.

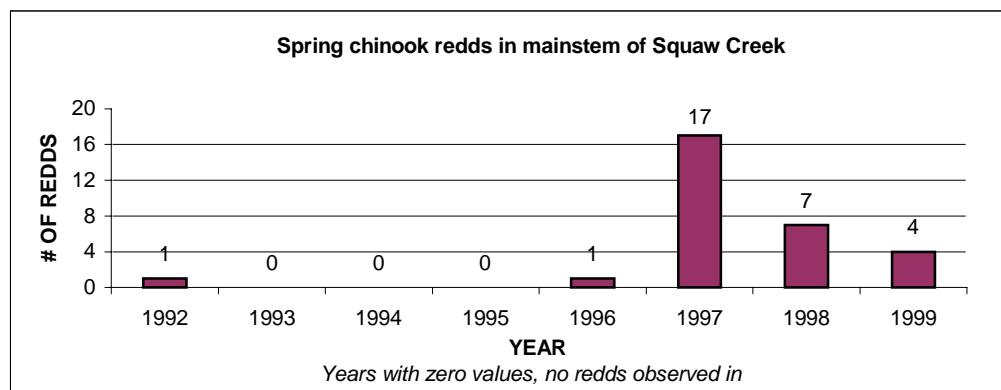


In 1999, the Forest continued bull trout spawning ground surveys on selected streams within the Lochsa River drainage. Approximately 86 miles of stream were surveyed during the spawning period of late August through early October. Multiple surveys were conducted on most streams. Appropriate stream segments were selected in 14 streams in the upper Lochsa River drainage. The streams included: Squaw Creek, West Fork Squaw Creek, East Fork Squaw Creek, Papoose Creek, East Fork Papoose Creek, West Fork Papoose Creek, Shotgun Creek, Hopeful Creek, Boulder Creek, Fox Creek, Twin Creek, Beaver Creek, Walton Creek and Fish Lake Creek. Spawning was documented in 11 of the 14 streams.

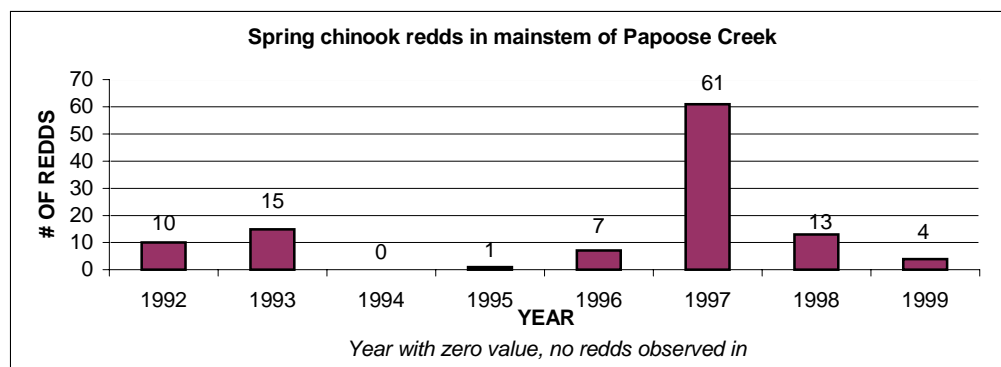
In 1998, the Forest established fish population monitoring sites on the inlet of Fish Lake within the Lochsa River drainage to identify and assess the intensity of bull trout juvenile rearing. Surveys in 1998 indicated the presence of an ad fluvial bull trout population in Fish Lake. These surveys also indicated the inlet may be the major spawning and early rearing area for the population. During 1999, bull trout spawning ground surveys were conducted in the outlet and inlet streams of Fish Lake. Bull trout redds were observed in both streams. The Forest will continue monitoring the inlet in 2000.

As part of the continuing Idaho Supplemental Studies being conducted in the Lochsa River drainage, the Nez Perce Tribal Fisheries Department completed the 1998 spring chinook spawning ground surveys in Papoose and Squaw Creeks. Results of these surveys indicated that spring chinook spawning were back to average numbers after an extremely high 1997 spawning season when compared to the 1992-1996 spawning seasons. A total of 13 and 7 redds were located within Papoose Creek and Squaw Creek respectively. This compares to 1-15 redds/year in Papoose Creek and 0-1 redds/year in Squaw Creek during 1992-96 survey period. In 1997 Papoose Creek and Squaw Creek had 61 and 17 redds respectively.

**Figure 11. Number of spring chinook salmon redds observed by Nez Perce Tribe in Squaw Creek during 1992-1999 spawning season (provisional data, Nez Perce Tribe).**



**Figure 12. Number of spring chinook salmon redds observed by Nez Perce Tribe in Papoose Creek during 1992-1999 spawning season (provisional data, Nez Perce Tribe).**



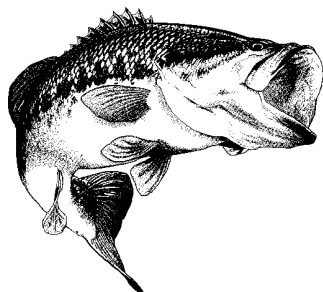
## Item No. 32 Inland Fisheries

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Frequency of Measurement: **Annual**  
Reporting Period: **Annual**

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### NORTH FORK CLEARWATER RIVER WATERSHED



#### WATERSHED STATUS

Only one natural event occurred in the North Fork Clearwater River watershed during 1999 that caused changes to the aquatic environment. During August 1999, a severe thunderstorm traveled through a path over the river between Washington Creek and Sprague Creek. The storm produced a hailstorm that defoliated the deciduous and coniferous riparian vegetation along the mainstem North Fork Clearwater River and various tributaries including lower Orogrande Creek. This large amount of precipitation caused major runoff in most of the smaller face drainages along the mainstem North Fork Clearwater River. Although the storm hit both aspects of the mainstem, the southern and eastern drainages did not show any major sediment transport into the river; these slopes have primarily re-vegetated with trees, which most likely slowed the runoff to the smaller drainages. The northern and western slopes are located in roadless areas and are primarily vegetated with brush fields with sporadic pockets of trees.

Most of the smaller streams along the north and west aspects experienced debris torrents that flowed over Road #247 into the mainstem North Fork Clearwater River. Sediment deposits of various volumes were observed along the banks of the mainstem with instream depositions visible in some areas. Impacts to Orogrande Creek were restricted to several smaller drainages in the lower four miles that were affected by the 1995/96 flood events. Impacts of the reduce streamside cover and the resultant effects on stream temperatures during the summer months have not been quantified, but some increases in summer stream temperatures most likely occurred in the smaller tributaries, however impacts to the mainstem North Fork Clearwater River were most likely nonexistent. Sediment impacts to the mainstem and lower Orogrande Creek affected some rearing areas along the shores; the magnitude of these impacts are relatively small and localized, and the impacts are expected to dissipate during high spring runoff in 2000.

Besides this event, instream conditions and riparian conditions did not show any substantial changes due to climatic, spring stream flows, erosion (sedimentation due to surface and mass wasting events), and management activities (i.e. roads, vegetative treatments, mining and grazing). Various field reviews and monitoring activities have supported the conclusion that habitat conditions are similar to 1998 conditions. Based on these assessments, the presence/absence and relative abundance of fish populations within the watershed are assumed to be similar to conditions observed during various surveys throughout the 1990s.

## HABITAT IMPROVEMENT

**WATERSHED/HABITAT RESTORATION** • The majority of activities within the North Fork Clearwater River drainage involved continued maintenance and rehabilitation of landslides and other erosive areas caused by the 1995/96 floods.

**ROAD OBLITERATION** • As a result of the 1995/96 floods, the majority of the watershed/habitat restoration projects in the North Fork Clearwater River drainage occurred in Comet Creek and smaller “**canyon face**” drainages in the upper North Fork Clearwater River drainage (upstream of Kelly Creek) to improve critical bull trout rearing habitat. Fisheries habitat funds were used to complete three miles of road obliteration in the Comet Creek and several unnamed non-fish-bearing drainages along the mainstem North Fork Clearwater River. These obliteration projects corrected existing sediment sources and eliminated potential mass wasting sites to provide long-term improvements to substrate conditions for 1.5 miles and 21.5 miles of Comet Creek and mainstem North Fork Clearwater River respectively.

**SEDIMENT DREDGING** • Two sediment traps, installed in a small un-named tributary of Elk Creek as a result of the 1993 debris torrent, were cleaned out. The purpose of these sediment traps was to reduce the amount of sediment depositing in the primary fish habitat downstream in upper Elk Creek.

**RIPARIAN FENCING** • One temporary electric fence, installed in 1996 around the sediment trap in the upper Elk Creek basin, was maintained in 1999. This provided protection of the riparian vegetation and maintained the integrity of the sediment trap from stream bank alterations.

## HABITAT MONITORING

Approximately 82 miles of streams were inventoried during the summer of 1999. Fisheries habitat surveys were conducted within selected drainages within the Weitas Creek, Thompson Point area, and Deer Creek within the Kelly Creek drainage.

**WEITAS CREEK DRAINAGE** • Surveys conducted in 1999 concentrated on the eastern portion of the Weitas Creek drainage from Johnny Creek to Windy Creek. Approximately 73 miles of stream surveys were completed in this essentially roadless area.

**WINDY CREEK** • Overall, habitat within 13 miles of Windy Creek showed fair to good habitat conditions for westslope cutthroat trout and bull trout. Limiting factors identified for spawning and rearing fish included

- ❖ high levels of cobble embeddedness in some areas. The average cobble embeddedness is 34%, which is above the DFC (<25%) for the “*no effect*” DFC Forest Plan standard;
- ❖ sporadic good spawning areas; and
- ❖ steep stream gradients with limited quantity and quality of primary pools.

Channel and bank stability conditions were rated as excellent. Large acting woody debris created over 40% of the pools, but the overall numbers were primarily low in most stream reaches. Evidence of historical fires on the instream and riparian conditions is still evident in the drainage, as large acting woody debris levels will likely continue to decline until trees within the riparian areas mature. Riparian areas consisted of willow and alder brush species; the majority of conifers along the streams were of the small tree succession stage.

**JOHNNY CREEK** • Habitat within 16 miles of Johnny Creek showed fair to good habitat conditions for westslope cutthroat trout. Limiting factors identified for spawning and rearing fish included

- ❖ Sporadic good spawning areas; and
- ❖ Steep stream gradients with limited quantity and quality of primary pools.

Channel and bank stability conditions were rated as excellent. With the exception of Buck Creek which had moderate levels of large acting woody debris and a higher cobble embeddedness level of 44%, average cobble embeddedness for Johnny Creek and its tributaries ranged from 14% to 31% which meets the DFC (30-35%) for the *“high fishable”*. Similar to Windy Creek, historical fires on the instream and riparian conditions is still evident in most of the drainage (except Buck Creek), as large acting woody debris levels should continue at low levels until trees within the riparian areas mature.

**JOHNAGAN CREEK AND SMITH CREEK** • Habitat within ten miles of Johnagan Creek and eight miles of the Smith Creek drainage showed fair to good habitat conditions for westslope cutthroat trout and bull trout. Limiting factors identified for spawning and rearing fish included

- ❖ Migration barriers,
- ❖ Sporadic good spawning areas; and
- ❖ Steep stream gradients with limited quantity and quality of primary pools.

Channel and bank stability conditions were rated as excellent. Average cobble embeddedness for Johnagan Creek, Smith Creek and its tributaries ranged from 4% to 22%, which meets the DFC (30-35%) for the *“high fishable”* DFC Forest Plan standard. Similar to Windy and Johnny Creeks, historical fires on the instream and riparian conditions is still evident most of the drainages, as large acting woody debris levels will most likely continue at low levels until trees within the riparian areas mature.

**WEITAS CREEK FACE DRAINAGES** • Habitat within 25 miles of the 13 smaller drainages showed fair to good habitat conditions for westslope cutthroat trout. Limiting factors identified for spawning and rearing fish included:

- ❖ Migration barriers,
- ❖ Sporadic good spawning areas; and
- ❖ Steep stream gradients with limited quantity and quality of primary pools.

Channel and bank stability conditions were rated as excellent. Average cobble embeddedness for these streams ranged from 8% to 47%; ten streams met the DFC (<25-35%) for the *“high fishable”* DFC Forest Plan standard. Similar to the larger streams, historical fires on the instream and riparian conditions is still evident in most of the drainages, as large acting woody debris levels should continue at low levels until trees within the riparian areas mature.

**THOMPSON POINT AREA** • In 1999, stream surveys were finished on national forest lands in drainages adjacent to Dworshak Reservoir. Approximately three miles of stream surveys were completed in three drainages that have historical roading and timber harvest.

**THOMPSON POINT AREA DRAINAGES** • Habitat within the 2.8 miles of three smaller drainages along the south shore of Dworshak Reservoir (Thompson, Butte and Crampton Creeks) showed poor to fair to habitat conditions for rainbow trout and westslope cutthroat trout. Limiting factors identified for spawning and rearing fish included:

- ❖ High levels of cobble embeddedness. Average cobble embeddedness for these streams ranged from 47% to 57%;
- ❖ Sporadic good spawning areas; and
- ❖ Steep stream gradients with limited quantity and quality of primary pools.
- ❖ Channel and bank stability conditions were rated as good to excellent.

**WATER TEMPERATURE MONITORING** • The Forest has been collecting water temperature data from 1992 to 1999 to determine temperature problems and prioritize riparian recovery efforts. Due to migration barrier at Dworshak Dam, streams within the Forest's boundary are considered non-anadromous (no potential for steelhead trout or spring chinook salmon); only water quality and habitat conditions related to resident fish (i.e. westslope cutthroat trout and bull trout) were analyzed.

In 1999, stream temperatures were monitored at 87 sites on 75 streams within the North Fork Clearwater River drainage. Temperature units for ten streams are still deployed in the field; data is unavailable. Stream temperature monitoring was initiated at other sites, but equipment failures prevented data collection. Comparison of the 1999 stream temperature data with the desired maximum temperatures as defined for the appropriate standards in the Forest Plan Forest Plan revealed that:

(1) The desired westslope cutthroat trout rearing temperature of 13°C (no effect) was not met at any of the sites on mainstem North Fork Clearwater River and Weitas Creek. Other streams that are designated with a “*no effect*” standard are currently being monitored, but the data recorders have not been retrieved for data download (i.e. Kelly Creek and tributaries and upper Weitas Creek tributaries).

(2) The desired westslope cutthroat trout rearing temperature of 16°C (high fishable) was met at 26 streams out of the 75 streams monitored with a “*high fishable*” standard.

(3) The desired westslope cutthroat trout rearing temperature of 18°C (moderate fishable) was met at eight streams out of the eight streams monitored with a “*moderate fishable*” standard.

(4) The desired westslope cutthroat trout rearing temperature of 20°C (low fishable) was met at 16 streams out of the 16 streams monitored with a “*low fishable*” standard.

(5) The desired bull trout rearing temperature of 12°C or below was met at four streams: Birch Creek, Leuty Creek, Len Creek and Cache Creek. Other streams that may have water temperatures that meet the desired 12°C are currently being monitored, but the data recorders have not been retrieved for data download (i.e. Kelly Creek and tributaries and upper Weitas Creek tributaries)

Overall, water temperatures of 75 streams within the North Fork Clearwater River drainage were under the State standard for cold-water biota; water temperatures did not exceed the daily maximum of 22°C and the maximum daily average of 19°C. The temperature data does not include the lower mainstem North Fork

Clearwater River; temperature data have shown water temperatures higher than the State standard in past years. The State standard of 13°C for the spring period for westslope cutthroat trout was met at 14 streams. As for bull trout, only three streams met the recommended fall spawning temperature of 9°C or below: Cache Creek, Birch Creek and Cayuse Creek (upstream Silver Creek). Five streams that had stream temperatures that exceeded 9°C for less than five days included: Deadwood Creek, Bim Creek, Felix Creek, Silver Creek, and Len Creek.

**FISH POPULATION MONITORING** • In 1999, fish population monitoring stations were established and snorkeled at 203 sites throughout 43 streams in conjunction with the habitat surveys. Westslope cutthroat trout was the dominant salmonid found at most sites. Bull trout were observed at a few sites in the Windy Creek and Johnny Creek drainages. Rainbow trout were also found at a few sites.

Bull trout spawning surveys were conducted on four streams within the North Fork Clearwater River drainage. Approximately three miles of stream within the Placer Creek, Ruby Creek, Windy Creek and Bostonian Creek drainages were surveyed during the spawning period of late August through early October. Spawning was documented in three of the four streams. These surveys did not find any stream reaches that indicated major concentrations of fluvial or ad fluvial bull trout spawning activity. Multiple surveys on these streams and other potential bull trout streams are scheduled for survey in 2000.

As part of their ongoing monitoring program, personnel from the IDF&G conducted fish population monitoring via snorkeling and creel census activities within the mainstem North Fork Clearwater River and selected tributaries. In 1997, the Nez Perce Tribe initiated a study to assess genetic status of westslope cutthroat trout populations throughout the North Fork Clearwater River drainage; the field study was continued into 1998-1999. The Forest coordinated with the Tribe and funded the genetic analysis of bull trout that were collected with the cutthroat trout. The Nez Perce Tribe will complete the final report in 2000.

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## LOCHSA RIVER WATERSHED

**HABITAT IMPROVEMENT - WATERSHED/HABITAT RESTORATION** • The majority of activities within the Lochsa River drainage involved projects mostly associated with anadromous fisheries (see habitat improvement – Upper Lochsa River). However, the Forest received some additional inland fisheries funds to supplement the road obliteration projects in the upper Lochsa River drainage. Approximately one mile of road obliteration work was completed by watershed restoration projects in the upper Papoose Creek drainage; this work will benefit bull trout through the recovery of the mainstem Papoose Creek.

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## PALOUSE RIVER DRAINAGE

**WATERSHED STATUS** • Only one natural event occurred in the Palouse River watershed during 1999 that caused changes to the aquatic environment. During the early summer 1999, deciduous riparian vegetation along various segments of the Palouse River was totally defoliated by insects. In most areas, the deciduous vegetation provides the majority of the canopy along streams in the Palouse River drainage. Impacts of the reduced streamside cover and the resultant effects on stream temperatures during the summer months have not been quantified, but some increases in summer stream temperatures most likely occurred in the mainstem Palouse River.



Besides this event, instream conditions and riparian conditions did not show any substantial changes due to climatic, spring stream flows, erosion (sedimentation due to surface and mass wasting events), and management activities (i.e. roads, vegetative treatments, mining and grazing). Various field reviews and monitoring activities have supported the conclusion that the habitat conditions are most likely similar to 1998 conditions. Based on these assessments, the presence/absence and relative abundance of fish populations within the watershed are assumed to be similar to conditions observed during 1997-98 surveys.

**HABITAT IMPROVEMENT** • In 1999, the Forest completed restoration projects within two former timber sale areas: Mash and Plum Pickle Timber Sales. The projects involved installing large woody debris into selected stream channels to improve channel stability. Approximately 2.0 miles of headwater streams within the Mash Timber Sale area and 0.5 miles of Strychnine Creek within the Plum Pickle timber sale area were improved with these placements. The project also improved fish rearing habitat within the fish-bearing portions of Strychnine Creek.

**HABITAT MONITORING** • Stream inventories of all fish-bearing streams within the Palouse River drainage on National Forest System lands have been completed within the last several years; no additional habitat surveys were scheduled for 1999.

Between 1994-1997, macro-invertebrates within the Schwartz Creek drainage (Potlatch River drainage) have been monitored to determine changes in the numbers and diversity of aquatic insects in relation to management activities, in comparison to the relatively un-impacted White Pine Creek drainage (Palouse River drainage), which also has macro-invertebrate monitoring. Due to a pending land exchange in the Potlatch River drainage, the 1998 monitoring program dropped the Schwartz Creek site and added two other sites within the Palouse River drainage: Wepah Creek and Big Sand Creek. Data reported by EcoAnalysts, Inc. showed that *"White Pine Creek, a minimally disturbed watershed had a healthy, diverse macro-invertebrate community with a high degree of ecological integrity"*. Wepah Creek, a moderately disturbed drainage, showed lower diversity and ecological integrity. Big Sand Creek, a highly disturbed drainage, showed the lowest macro-invertebrate diversity and ecological integrity. The report (Pfeiffer and Robinson, 1999) also noted while Big Sand Creek had the lowest macro-invertebrate diversity and integrity, Big Sand Creek would rate relatively good when compared to an agricultural or urban stream. The contractor is currently analyzing the 1999 data.

**WATER TEMPERATURE MONITORING** • Stream temperatures were monitored throughout the summer at eight sites on seven streams within the Palouse River drainage to evaluate habitat conditions for brook trout and rainbow trout. The Upper Palouse River is not accessible to anadromous fish. In addition, bull trout and westslope cutthroat trout have not been observed in the upper Palouse River drainage. Comparison of the 1999 stream temperature data from the eight baseline sites and the desired maximum temperatures as defined for the *"low fishable"* standard in the Forest Plan revealed that the desired rainbow trout and brook trout rearing temperature of 20°C was met at six sites; the mainstem Palouse River site and the Meadow Creek sites (downstream of Blake's Fork) exceeded the desired temperature. However, Meadow Creek exceeded the desired temperature only one day.

Overall, water temperatures at seven sites, except the Palouse River were under the State standard for cold-water biota; water temperatures did not exceed the daily maximum of 22°C and the maximum daily average of 19°C. The State standard of 13°C for the spring spawning periods for rainbow trout was met only at the Meadow Creek site. Water temperatures were not recorded throughout the fall spawning period for brook trout. However, the stream temperatures are most likely below the State standard of 13°C.

**FISH POPULATION MONITORING** • Due to the absence of sensitive fish species (i.e. steelhead trout, westslope cutthroat trout, bull trout, spring chinook salmon), fish population monitoring is not scheduled on an annual basis within the Palouse River drainage; no monitoring was conducted in 1999.

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## LOCHSA RIVER AND NORTH FORK CLEARWATER RIVER DRAINAGES

**HIGH MOUNTAIN LAKE SURVEYS** • In 1991, the IDF&G and the Clearwater National Forest completed surveys on 55 high mountain lakes within the Lochsa River drainage. In 1994, surveys were continued with the **High Mountain Lake Fisheries Project**, a cooperative project with IDF&G and Lewis Clark State College. In the North Fork Clearwater River drainage, 14 high mountain lakes were surveyed to develop baseline ecological data. The project continued from 1995-1998 with 43, 45, 28, and 33 lakes being surveyed in the Lochsa River and North Fork Clearwater River drainages respectively. The remaining 13 lakes within the Lochsa River and North Fork Clearwater River drainages were surveyed; the High Mountain Fisheries Project was completed in 1999.

Overall, the seven-year project reviewed 230 high mountain lakes with a total area of approximately 1,520 acres. Of these lakes, 134 lakes (58%) were found to be fishless. Brook trout, an introduced fish species, was found in 19 of the lakes. The IDF&G and the Forest in conjunction with the bull trout recovery planning effort coordinated by the U.S. Fish and Wildlife Service (USF&WS) is currently assessing the potential management actions regarding drainages with brook trout. Although the goal of the cooperative project to inventory all high mountain lakes on the Forest has been completed, the IDF&G and the Forest will complete additional monitoring of selected lakes. Information acquired from the initial surveys and subsequent monitoring will be used in the evaluation of current fish stocking plans. In addition, a report will be completed by IDF&G on amphibian distributions and the amphibian/trout relationships in the high mountain lakes.

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# HERITAGE PROGRAM

## Goal

Manage and interpret heritage resources in accordance with Federal laws and Forest Service direction. Ensure that Indian tribal rights, as retained in treaties and other agreements with the tribes, are protected. Manage the Lolo Trail system to protect heritage resource values while enhancing public use and awareness. Nominate significant heritage sites to the National Register of Historic Places.

## Strategy

Examine and conduct inventories on all proposed project areas, document findings and provide direction for project implementation to ensure compliance with State and Federal regulations. Improve relations and develop working partnerships with the Nez Perce tribe to facilitate communication, consultation and cooperation. Identify and enhance resource values on the Lolo Trail system. Work with the public to improve values and increase awareness of heritage resources. Continue to assess heritage sites for nomination to the National Register of Historic Places.

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### Item No. 4 - Protection and Condition of Heritage Resource Sites

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Frequency of Measurement: **Annual**  
Reporting Period: **Annual**

## Monitoring Action

Compare project effects to environmental analysis documents and project cultural resource reports to determine if projects have caused adverse effects on cultural resources. If this determination is made, necessary mitigation will be prescribed.

## Accomplishments/Findings

A total of three projects/sites were monitored. All of these involved facilities construction while projects were in progress; no heritage values were observed.

Table 1 show the number of projects, acres surveyed and site identified during the course of project preparation (projects like timber sales and construction of recreation facilities).

Table 1. **HERITAGE  
RESOURCE SURVEYS**

Table 1 shows the number of projects, acres surveyed and sites identified during the course of project preparation (projects like timber sales and construction of recreation facilities).

\*Archaeological test excavations are conducted in areas within or near site locations, or on landforms that have a high probability of containing evidence of human activity. Tests indicate the absence, presence and/or

amount of subsurface cultural material in project areas and help Forest officials decide where ground-disturbing developments may or may not take place.

YEAR	PROJECTS TESTED*	PROJECTS SURVEYED	ACRES SURVEYED (CLEARED)	NUMBER OF SITES IDENTIFIED
1988	4	27	9,435	36
1989	1	16	4,246	26
1990	0	30	2,747	21
1991	5	85	5,227	20
1992	14	62	6,496	19
1993	10	40	2,117	69
1994	4	41	3,886	52
1995	1	35	5,522	12
1996	5	46	3,947	20
1997	2	25	6,613	12
1998	6	31	2,300	5
1999	2	16	1,742	56

## PROGRAM HIGHLIGHTS

**PASSPORT IN TIME (PIT)** – Two history teachers and eight students from Columbus, Indiana volunteered on the Packer Meadow inventory project for one week in July. This is the fourth year that these teachers and students have been involved in PIT inventories on the Lolo Trail. The students must apply through their school to be involved in the “Trails West” program, which includes one week on the Lolo Trail. Once they are selected, they must complete a series of studies on the history of the Lolo Trail, the Lewis and Clark Expedition, and the Nez Perce culture.

**TAKE PRIDE IN THE CLEARWATER (TPIC)** - Over 100 people, comprising mostly of families from the local communities and Forest Service employees volunteered for a 3-day weekend outing to clean campgrounds and maintain segments of the Lewis and Clark/Nee Me Poo National Historic Trails.

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# LANDS



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## Item No. 12 Land Ownership Adjustments

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Frequency of Measurement: **Annual**

Reporting Period: **Annual**

### Monitoring Action

The Forest Lands staff will prepare a report specifying the number of acres acquired, traded or sold. The report will contain the purpose of the land exchanges and how they contribute to the satisfaction of the Forest Plan objectives.

### Findings

During FY99, the Forest neared completion of the **Beaver/Butter N Eggs Cleanup Land Exchange** involving approximately 2,454 acres of Federal land and 2,261 acres of non-Federal land. All identified parcels are remnants of previous exchanges with Potlatch Corporation. Completion is expected in early FY00.

The **Pits Exchange**, involving approximately 3,132 acres of Federal land and approximately 3,172 acres of non-Federal lands, has been identified. All parcels have been cruised. Appraisal work (by Idaho Department of Lands appraiser) is scheduled for completion in late spring or early summer of 2000. The NEPA document will be prepared this summer and finalized late summer or fall depending on the progress of the appraisal. Anticipated closing is the fall/winter of 2000.

The overall objective of these exchanges is to consolidate Federal ownership for more efficient and cost-effective land management. These exchanges were consistent with the management area objectives identified in the Forest Plan and the land adjustment criteria also within the Forest Plan.

Completion of these exchanges satisfied several objectives identified in the Forest Plan. Costs for surveying and posting boundary lines; acquiring access easements and constructing access to manage national forest land; acquiring/granting other use permits; and trespass will be reduced.

Implementation of these exchanges contributed considerably to the management objectives and administrative efficiency of the Forest.

Over the past seven-year period, the Forest has been involved in eight land exchange cases. During that time, 32,079 acres have been acquired while 21,067 acres have been exchanged. Completion of these exchanges has saved the government in excess of \$1,000,000 through savings in administrative costs such as landline location, rights-of-acquisition, and trespass cases.

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# MINERALS

## Goal

Encourage and facilitate the orderly exploration, development and production of the energy and mineral resources on the Clearwater National Forest. Ensure that this exploration, development and production are conducted in an environmentally sound manner.



## Strategy

Process all notices of intent, operating plans, exploration permits and lease applications in a timely manner. Monitor to ensure compliance with State and Federal regulations. Develop adequate reclamation plans to return disturbed land to other productive uses, and monitor to ensure that reclamation is performed to specified standards. Maintain close coordination with local mining groups as well as applicable State and Federal agencies.

### Item No. 15 – Minerals Prospecting and Development

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Frequency of Measurement: **Annual**  
Reporting Period: **Five Years**

## Monitoring Action

The Forest geologist will prepare a report detailing the status of the minerals program. The report will be based on a review of all projects and mining activities that may have an effect on minerals management. The number of case files, status of case files, estimated quantity and value of mineral production will be evaluated.

## Accomplishments/Findings

**OPERATIONS** - A total of 92 operations were processed on the Forest during 1999. Of the 92 total operations processed, 75 were non-bonded, non-energy operations; 17 were bonded non-energy operations. All 17 bonded non-energy operations were administered to standard.

In FY96, the Washington Office issued new definitions for accomplishment indicators. Due to the difference in definitions of accomplishment, the 265 average annual number of cases predicted in the Forest Plan should not be compared to the 92 total operations processed and administered during FY99.

During the summer of 1998, bull trout were listed as a threatened species. In order to comply with section 7(d) of the Endangered Species Act, decisions for 19 proposals for FY99 are postponed until the consultation with USF&WS is complete. The consultation process was not completed during FY99.

**LOCATABLE MINERALS** - The only significant locatable mineral mined from the Forest is gold. Miners are not required to report their production to the Forest Service. However, the Forest minerals geologist has estimated that approximately 132 ounces of gold were mined from the Forest during FY99. Of the 132 ounces of gold mined, approximately 120 ounces were mined from placers. The remaining 12 ounces were mined from a lode claim. The value of this amount of gold would be approximately \$39,600 at an average gold price of \$300/oz.

**COMMON VARIETY MINERALS** - The Forest provides mineral materials for road surfacing to county and state agencies, for national forest roads and for use in private industry. Forest records show that 40,030 tons of materials were produced from national forest lands in FY99 with an estimated value of \$10,008.00.

**MONITORING** - All active earth-disturbing minerals activities and suction dredge mining were monitored for compliance with operating plans, Forest Plan standards, and State and Federal regulations. No impacts on mining activities from other resources were identified.

## Item No. 36 - Minerals Resource Availability

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Frequency of Measurement: **Annual**  
Reporting Period: **Five Years**

### Monitoring Action

The Forest geologist will prepare a report on the probable effect of renewable resource prescriptions and management direction on mineral resources and activities, including exploration and development. Denial of proposed mineral activities and changes in land status affecting mineral availability will be documented. Examples include designation as wilderness or recommended wilderness, legislation such as the Threatened and Endangered Species Act, executive orders, and special resource stipulations or management direction. Changes in land status or restrictions on minerals availability; exploration and development will be documented.

### Accomplishments/Findings

The Clearwater National Forest consists of a total of 1,825,318 acres. Of these acres, 259,167 (approximately 14%) are in the Clearwater portion of the Selway-Bitterroot Wilderness and are withdrawn from mineral entry. In addition to wilderness, the Forest currently has 52 individual sites withdrawn from mineral entry. This figure has remained the same since FY94.



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# RANGE

## Goal

Manage livestock grazing land consistent with the protection and management of other resources.



## Strategy

Complete range environmental studies analyzing present management. Prepare allotment management plans for all active allotments. (An allotment is an area of land where one or more individuals graze livestock.)

### Item No. 6 – Livestock Forage Available, Range in Good Condition Per Established Allotments

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Frequency of Measurement: **Annual**  
Reporting Period: **Five Years**

## Monitoring Action

Forest range personnel will annually monitor each grazing allotment for use, condition of range, forage availability and protection of other resources. Data will be entered into the INFRASTRUCTURE database generating one source of information about the Clearwater National Forest Range Program.

## Accomplishments/Findings

Range allotments are routinely monitored for use, possible resource damage and maintenance needs. Current range conditions overall are good. There are 17 active cattle allotments on the Forest (14 on the Palouse Ranger District and 3 on the Lochsa Ranger District) that have 35 individual permittees. There are 1,471 cattle and 416 horses permitted to graze on the Forest. This amounted to approximately 9,700 animal unit months (AUMs) in FY99. An AUM is the amount of forage needed to sustain one cow, five sheep, or five goats for a month. These numbers reflect the permitted animals on cattle allotments and Outfitter and Guide Permits and do not include animals associated with recreational visitors.

No range environmental studies were completed in FY99. However, an environmental analysis was completed for the Purdue Creek Allotment on the Palouse Ranger District in 1998; a decision should be issued in 2000.

Noxious weeds were controlled on approximately 1,352 acres. Trailheads and campgrounds were treated along the Lower Lochsa River corridor and the Palouse Ranger District.

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# RECREATION

## Goal

Provide a range of quality outdoor recreation opportunities within a forest environment that will meet the public needs now and in the future. Provide opportunities for a broad spectrum of dispersed activities and developed facilities.

## Strategy

The Clearwater National Forest has developed several strategies to meet Forest Plan goals in recreation. These strategies can be summarized as follows.

**IDENTIFY RECREATION AREAS.** The Forest has been divided into six areas of similar recreation opportunities, use patterns and user needs. Planning within these areas will attempt to provide a range of recreation opportunities within constraints set by the land base and other uses.

**RECONSTRUCT EXISTING RECREATION FACILITIES TO STANDARDS APPROPRIATE.** Facilities at all sites will be reconstructed to meet the needs of people with physical disabilities where topography allows.

**PROVIDE FOR CONSTRUCTION OF NEW RECREATION FACILITIES.** Add new facilities to complement existing facilities such as interpretive trails near picnic areas. Facilities at all sites will be constructed to meet the needs of people with physical disabilities within the constraints of a site's topography.

**CONTINUE TO REQUEST FUNDING.** Funding is needed to operate, maintain and reconstruct sites to full service standards.

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### Item No. 2 Wide Spectrum of Recreation Opportunities

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Frequency of Measurement: **Annual**  
Reporting Period: **Five Years**

## Monitoring Action

The Forest recreation staff will monitor recreation opportunities. Monitoring and evaluation will:

- **1) compare recreation use on the Forest with the broad range of opportunities that could occur and are supported in the Forest Plan,**
- **2) identify changes or conflicts in existing recreation use, and**
- **3) identify directions for changes and alternatives for conflict resolution.**

## Accomplishments/Findings

**INTRODUCTORY NOTE:** No systematic sampling procedures to estimate actual recreation use are in place for the National Forest system. Recreation use estimates are arrived at primarily by observation and are useful primarily for indicating trends in use. Use estimates for developed recreation sites reflect more closely actual use since they are based on fees paid and information provided by visitors at points of visitor contact such as visitor centers.

In monitoring reports for 1999 and earlier, recreation funding was shown in the **ECONOMICS** section, Table 1. **RECREATION FUNDING, USE AND FEES**. This table is not comparable for different years. See the **ECONOMICS** section, Table 2. **COMPARISON BETWEEN YEARLY EXPENDITURES (IN THOUSANDS \$) AND FOREST PLAN PROJECTIONS (IN 1999 DOLLARS)** for information about recreation and trails budgets that is comparable between years.

**GENERAL FOREST AREA USE:** The number of recreational visitors to the Clearwater National Forest continued to increase in 1999 reflecting an increasing population in Idaho, repair of flood damaged roads and trails and an increasing interest in the route of the Lewis and Clark expedition as the Lewis and Clark Bicentennial year approaches. Inquiries about the route of Lewis and Clark crossing the Clearwater National Forest continued to increase in number during 1999.

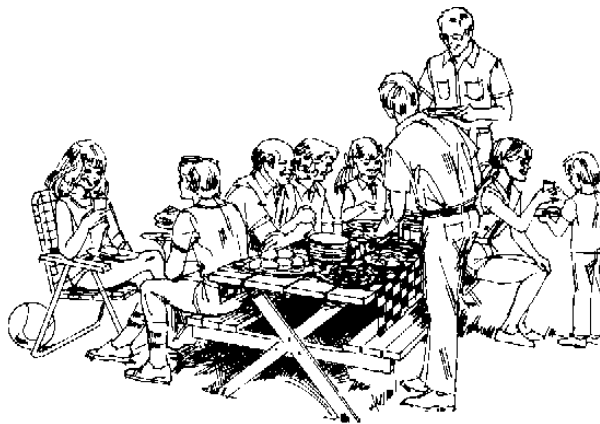
Whitewater rafting use on the North Fork continued to increase. Information regarding boating use on the Lochsa River is located in the **WILD AND SCENIC RIVERS** section.

**DEVELOPED AREA USE:** Fees collected in 1999 at developed campgrounds mirrored collections from 1997. Several campgrounds were under reconstruction on the North Fork Ranger District and were closed for the summer camping season. A cold, wet spring may have also attributed to the decline in visitors.

### RECREATION USE:

<b>RECREATION USE AND FEES COLLECTED*</b>	<b>FY94</b>	<b>FY95</b>	<b>FY96</b>	<b>FY97</b>	<b>FY98</b>	<b>FY99</b>
<b>Recreation Use (M Visitor Days)</b>	1140	1158	1158	1681	1808	1600
<b>Fees Collected</b>	\$58,895	\$63,047	\$63,330	\$85,572	\$96,763	\$85,907
<b>Change from Previous Year (%)</b>	+4	+7	+0	+35	+13	-11%

\* The use estimate reported for 1997 was drawn from the **INFRASTRUCTURE** system which uses estimates differing from that used in previous years. This method resulted in a skewed estimate of use and indicated a trend of rapid growth in use that did not actually occur. Estimate of use for 1998 is the figure reported from Table 1 in the Economics section and reflects the overall trend in recreation





**RECREATION FACILITY IMPROVEMENT:** Emphasis continues to be placed on improving existing campground facilities. These improvements include upgrading or replacement of aging water systems, improved access to recreation facilities for the disabled, and improved parking to accommodate a variety of users. Over the last ten years, the Forest has been focusing in improvement of facilities in the U.S. Highway 12 corridor, the North Fork Clearwater corridor, and camp areas in the Palouse region. The Forest is approaching completion of the rehabilitation of developed campgrounds and will now begin focusing on the planning for facilities expected to be in demand during the Lewis and Clark Bicentennial observance.

The following is a list of projects in FY99:

- **Reconstruction projects at Noe Creek, Kelly Forks, and Hidden Creek Campgrounds were completed during 1999 using Idaho Department of Parks and Recreation Recreational Vehicle Grant funds, appropriated capital improvement funds and force account labor. Reconstruction of these sites included replacing old facilities with accessible toilets, tables and fire rings.**
- **Utilizing capital investment funds and grant funding from the Idaho Heritage Trust, the Lochsa Ranger District completed another phase of rehabilitation work at the Lochsa Historic Ranger Station. This project rehabilitated the root cellar and log footbridge.**
- **Reconstruction of the historic Kelly Forks Log Cabin was continued in 1999 by force account and volunteer labor. Work included replacing the floor and replumbing the building. No specific funding has been appropriated for continuation of restoration work in 2000. It is anticipated that some work will be accomplished using volunteer labor and Forest funds to the extent possible.**

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## RECREATION SPECIAL EFFORTS

**PARTNERSHIPS** - Partnerships continue to be important to the success of the Forest's recreation program. In 1999, as in previous years, partners contributed a significant amount of labor and funding to improve recreational facilities, and help meet forest visitor expectations by providing interpretive and *"Good Host"* programs.

**NOXIOUS WEED CONTROL** - The Clearwater National Forest and Idaho Transportation Department (ITD) coordinate noxious weed treatment in the Highway 12 corridor from Kooskia to Lolo Pass. For the first time this year, ITD was able to treat noxious weeds in the highway right-of-way in all but a few miles of the river corridor. Because of weather, treatment did not occur for several miles from Lolo Pass west. The Lochsa District with assistance from the Moose Creek District, treated weeds from Tukaytespe to White Sands Campground at administrative sites including campgrounds, trailheads and river access sites.

Treatment is aimed at reducing noxious weed occurrence and invasion. Treatments included pulling, burning, introducing biological controls, and herbicide application. Grass seeding in treatment areas help to out compete new weed starts. In the few years that ITD has been treating five miles on either end of the river corridor resulting in considerable reductions in noxious weeds. Monitoring has shown that most of the sites treated are exhibiting significant declines in noxious weeds. New sites have been identified for future treatment as sites treated for several years enter a maintenance stage. Developed sites along the North Fork Clearwater River and elsewhere on the Forest were also treated to reduce the spread of noxious weeds.

## Item No. 14 - Off Highway Vehicle Use Impacts

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Frequency of Measurement: **Annual**  
Reporting Period: **Five Years**

### Monitoring Action

The Forest recreation staff will prepare a report displaying the effects of Off Highway Vehicles (OHVs) on Clearwater National Forest resources. Monitored items include complaints and conflicts between user groups, impacts to trails from motorized use, citations for violations of closure regulations, and resource damage occurring on the Forest.

### Accomplishments/Findings

Observations of recreation activity on the Forest indicates that use of OHVs continued to increase in 1999. OHVs are routinely observed on most Forest roads open to their use throughout the snow free season. Snow machine use also appears to have increased significantly over the last several years as the snow machine industry has improved the capability of these machines to travel in rugged terrain for longer distances. Due to topography and vegetation, most use of OHVs is still confined to roads.

In 1999 complaints and conflicts between user groups and citations for violations of regulations increased somewhat as the number of motorized users continues to grow. Motorized use and conflicts are most prevalent on the Palouse and North Fork Ranger Districts. Resource damage to trails and other resources resulting from motorized use is still considered to be minimal and relatively easily corrected.

Instances of reported conflict are still related primarily to the objection of non-motorized visitors to the presence of motorized users on the National Forest. Instances of unauthorized construction of trails to permit use of OHVs are still occurring occasionally throughout the Forest. These have been limited to removing down trees and small vegetation to allow passage of small OHVs, commonly referred to as "*4 wheelers*". The effects of these unauthorized activities have been limited to minor ground and vegetation disturbance with short-term effects. There have been no cases where action was necessary to correct resource damage from unauthorized use of OHVs other than action to stop the use.

In 1998-99, the Lolo National Forest restricted use of snow machines in the Great Burn roadless area in Montana. This may result in increased use of snow machines in Idaho. Monitoring of snow machine use in the area of the Great Burn roadless area or Idaho has been added to the list of activities that will be monitored in FY00.

### Monitoring Items

In 1998, monitoring of the following items was initiated and continued in 1999 to obtain a relative index of the amount of activity and conflicts related to OHV use.

**NUMBER OF REPORTED COMPLAINTS RELATING TO USE OF OHVS, OR INSTANCES OF CONFLICT BETWEEN USER GROUPS:** Informal survey of office receptionists and recreation managers on the Clearwater National Forest indicated that the frequency of complaints regarding use of OHVs continued to increase. The number of complaints received was in the order of 10-20.

Several complaints about motorized access to Fish Lake on the North Fork Ranger District were received. These complaints prompted increased monitoring of activity at Fish Lake and plans to involve users in preparation of a plan that will guide management of use in the Fish Lake area to rehabilitate unacceptable conditions and keep future impacts within defined limits.

**NUMBER OF CITATIONS FOR VIOLATIONS OF REGULATIONS RELATING TO USE OF OHVS:** In 1999 there were 145 incident reports, warning notices, or violation notices issued for violations of regulations - an increase of about 24% over that reported in 1998.

**SNOW MACHINE ACTIVITY IN THE GREAT BURN ROADLESS AREA:** Use of snow machines in the Great Burn area will be monitored from the air and ground periodically to obtain a general idea of the amount of activity occurring.

LAW ENFORCEMENT STATISTICS RELATING TO OHV USE*	FY94	FY95	FY96	FY97	FY98	FY99
OHV Road Closure Violation Citations	0	2	4	1	0	8
OHV Trail Closure Violation Citations	0	0	0	1	0	0
Unauthorized Trail Building Citations	0	0	0	0	2	0
Incident Reports of Violations Related to OHV Use	7	33	69	48	116	137
Damaging a Natural Feature						1
<b>TOTAL</b>	<b>7</b>	<b>35</b>	<b>73</b>	<b>50</b>	<b>118</b>	<b>146</b>

\* Source of information is LEMARS law enforcement statistical report.

Statistics presented in the above table indicate the continued increase in use of OHVs on the Clearwater National Forest. While the number of incidents of violation of regulations by OHV users has risen commensurately with the amount of use, the number of instances of resource damage attributable to OHV use has not risen. Most conflicts associated with use of OHVs are still related to use on roads or trails where use is restricted by regulation, or are social conflicts between motorized and non-motorized users.



## RESEARCH NATURAL AREAS

### Goal

Identify and manage unique and/or outstanding botanical, geological and historical areas of the Forest for public enjoyment and use.

### Monitoring Action

Establish a sufficient number of Research Natural Areas (RNA) on the Forest. Each should include at least two or three examples of major habitats and at least one example of a minor habitat. Major habitats are widespread, whereas minor habitats are unique, with little occurrence on the Forest.



### Accomplishments/Findings

There are twelve RNAs identified in the Forest Plan on the Clearwater National Forest. The Lochsa River RNA was officially designated before the release of the Forest Plan in September 1987. Since then, nine additional RNAs have been designated.

**AQUARIUS**

**CHATEAU FALLS**

**GRAVE PEAK**

**BALD MOUNTAIN**

**DUTCH CREEK**

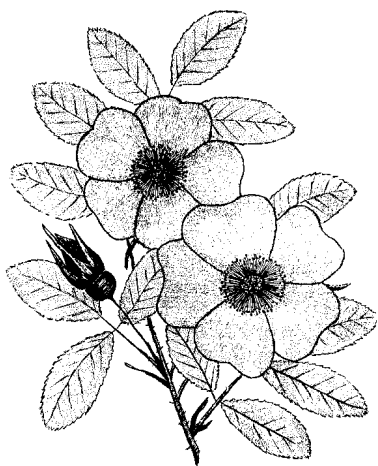
**SNEAKFOOT**

**MEADOWS**

**BULL RUN CREEK**

**FOUR-BIT CREEK**

**STEEP LAKES**



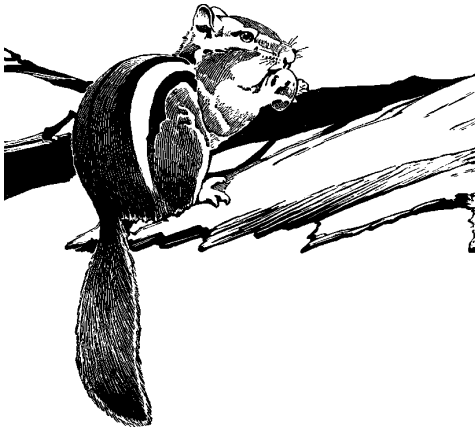
Fenn Mountain and Rhodes Peak are in application process for official designation. Official designation occurs when an *"Establishment Report"* (a complete botanical flora and fauna report) is finished for the proposed RNA. This report should be completed when funding is available.

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## RESEARCH NEEDS

### Item No. 24 Research Needs

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Frequency of Measurement: **Annual**  
Reporting Period: **Five Years**

#### **Monitoring Action**

The Forest Planning staff will maintain a list of research needs. The initial list of approved research needs appears in the Forest Plan (pages II-15, 16). As additional research needs are identified, they will be added to this list.

#### **Findings**

**RECREATION:** In 1998-99, the Lolo National Forest restricted use of snow machines in the Great Burn roadless area in Montana. This may result in increased use of snow machines in Idaho. The Clearwater and Lolo National Forest will jointly monitor snow machine use in the Idaho area of the Great Burn roadless area in FY00.

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# RIPARIAN AREAS

## Goal

Manage riparian areas under the principles of multiple use as areas of special consideration for distinctive values. Integrate riparian management with the management of adjacent areas to ensure protection of water resource and other dependent resources.

## Strategy

Evaluate on-site and cumulative effects of proposed actions, resolving conflicts in favor of riparian-dependent resources. Define and identify riparian areas and their values. Develop direction and techniques to protect or enhance these values.

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### Item No. 10 Riparian Area Condition

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Frequency of Measurement: **Annual**  
Reporting Period: **Five Years**

## Monitoring Action

Riparian monitoring stations have been established to determine baseline or current riparian conditions and also to determine the effects of road construction, timber harvest, site preparation, and grazing.

## Accomplishments/Findings

Baseline or current conditions, including channel characteristics, are monitored annually on several streams. This monitoring is repeated on a 3- to 5-year cycle to determine trend in channel condition. Permanent channel cross sections are established in which gradient (channel slope), instream sediment concentration, channel substrate (rock size) composition, and photo points are established. Channel type and stability are determined for each of the streams. An attempt is made to associate cause with effect when conditions do not appear as natural.

Instream sediment was analyzed using Wolman pebble count and cobble embeddedness techniques. (A Wolman pebble count classifies the size of stream substrate.) Channel cross-sections were measured to determine changes in deposition (sediment deposits) or scour (removal of channel rock) over time.

In 1999, the Forest measured channel geometry and instream sediment in 27 streams across the Forest. Table 1 lists these monitoring sites. Data collected at each site is available in the Supervisor's Office.

TABLE 1. CHANNEL MORPHOLOGY SITES - 1999

BASIN	WATERSHED	BENEFICIAL USE	ACTIVITIES
Palouse River (17060108)	Blake's Fork	Brook Trout	Timber Sales, Grazing
	Gold Creek	Brook Trout	Timber Sales, Grazing
Lochsa River (17060303)	Deadman Creek	Steelhead	Timber Sales
	M.F. Deadman Creek	Cutthroat	Baseline
	W.F. Deadman Creek	Steelhead	Timber Sales
	E.F. Deadman Creek	Steelhead	Baseline
	Fish Creek	Steelhead	Baseline
	Brushy Fork Creek	Chinook	Timber Sales
	Walton Creek	Steelhead	Timber Sales
	Boulder Creek (Wilderness Gateway)	Steelhead	Baseline
	Split Creek	Steelhead	Baseline
	Eldorado Creek	Steelhead	Timber Sales, Grazing
Clearwater River (17060306)			
Upper North Fork Clearwater River (17060307)	Deer Creek	Cutthroat	Baseline
	Larch Creek	Cutthroat	Timber Sales
	Cabin Creek	Cutthroat	Timber Sales
	Smith Creek	Cutthroat	Baseline
	Johnagon Creek	Cutthroat	Baseline
	Doris Creek	Cutthroat	Baseline
	Fox Creek	Cutthroat	Baseline
	Johnny Creek	Cutthroat	Baseline
	Davis Creek	Cutthroat	Baseline
	Buck Creek	Cutthroat	Baseline
	Bighorn Creek	Cutthroat	Baseline
	Windy Creek	Cutthroat	Baseline
	Young Creek	Cutthroat	Baseline
	Seat Creek	Cutthroat	Baseline
	Orogrande Creek	Cutthroat	Timber Sales

Table 2 provides a summary of the Wolman pebble count data for each of the 27 streams where these measurements were taken. Cross sectional measurements are available at the Supervisor's Office.

TABLE 2. SUMMARY OF WOLMAN PEBBLE COUNT DATA

STREAM	CHANNEL TYPE	GRADIENT %	% FINES <sup>1</sup> 0-2MM	% FINES <sup>2</sup> 0-4MM	D50 IN MM <sup>3</sup>	D84 IN MM <sup>4</sup>
Blake's Fork	C4b	3.4	25.0	27.6	26 (Coarse Gravel)	73 (Small Cobble)
Gold Creek	B4	2.7	16.5	20.8	35 (Very Coarse Gravel)	1200 (Large Boulder)
Deadman Creek	A3	4.1	15.5	17.5	123 (Small Cobble)	444 (Small Boulder)
M.F. Deadman Creek	A3	7.7	13.4	20.9	197 (Large Cobble)	775 (Medium Boulder)
W.F. Deadman Creek	A3	7.3	17.7	28.3	51 (Very Coarse Gravel)	363 (Small Boulder)
E.F. Deadman Creek	A3a	10.8	18.3	24.6	775 (Medium Boulder)	1400 (Large Boulder)
Fish Creek	B2	3.3	10.9	11.4	296 (Small Boulder)	768 (Medium Boulder)
Brushy Fork Creek	B2	2.5	4.0	4.7	340 (Small Boulder)	900 (Medium Boulder)
Walton Creek	B3a	4.9	15.0	22.4	60 (Very Coarse Gravel)	286 (Small Boulder)
Boulder Creek (Wilderness Gateway)	A2	5.4	3.6	3.9	337 (Small Boulder)	884 (Medium Boulder)
Split Creek	A2	7.6	11.0	11.6	243 (Large Cobble)	1400 (Large Boulder)
Eldorado Creek	A3	6.8	35.7	35.9	56 (Very Coarse Gravel)	229 (Large Cobble)
Deer Creek	B3a	5.7	5.3	6.1	184 (Large Cobble)	507 (Small Boulder)
Larch Creek	B3a	6.4	4.6	5.6	108 (Small Cobble)	340 (Small Boulder)
Cabin Creek	B4a	6.9	7.2	9.3	42 (Very Coarse Gravel)	83 (Small Cobble)
Smith Creek	B3a	4.6	0.6	1.2	123 (Small Cobble)	334 (Small Boulder)
Johnagon Creek	C4	1.7	0.2	0.6	120 (Small Cobble)	259 (Small Boulder)
Doris Creek	B3a	5.0	3.7	4.6	81 (Small Cobble)	191 (Large Cobble)
Fox Creek	B3a	8.2	3.4	5.3	185 (Large Cobble)	515 (Medium Boulder)
Johnny Creek	B3	2.8	6.0	6.9	86 (Small Cobble)	177 (Large Cobble)
Davis Creek	B3a	7.8	2.4	4.3	79 (Small Cobble)	235 (Large Cobble)
Buck Creek	B4a	9.0	5.6	6.3	58 (Very Coarse Gravel)	134 (Large Cobble)
Bighorn Creek	B4a	6.4	3.8	6.3	43 (Very Coarse Gravel)	105 (Small Cobble)
Windy Creek	C3b	2.3	15.8	19.4	55 (Very Coarse Gravel)	201 (Large Cobble)
Young Creek	B3a	8.2	13.5	16.6	151 (Large Cobble)	565 (Medium Boulder)
Seat Creek	B4a	5.9	29.2	42.8	6.3 (Fine Gravel)	29 (Coarse Gravel)
Orogrande Creek	B3	2.6	22.3	22.5	120 (Small Cobble)	419 (Small Boulder)

<sup>1</sup> Clay, silt, and sand.<sup>2</sup> Clay, silt, sand, and very fine gravel.<sup>3</sup> The mean particle size. The stream classification is based on the D50.<sup>4</sup> The diameter that is equal to 84% of the bed particles. The choice of the 84% value is arbitrary; it is two standard deviations larger than the mean size, assuming a normal distribution. Experience has shown that particles larger than the median size play an important role in flow resistance, and therefore a single parameter to describe bed particle size should be some size larger than the median.



## PALOUSE RIVER

**BLAKE'S FORK** - Blake's Fork is a small tributary of Meadow Creek in the Palouse River basin. Road construction and timber harvest began in Blake's Fork in 1984 and continued through 1987. To date, 2.7 miles of road have been constructed in this two square mile watershed. Road density is 1.37 miles per square mile ( $\text{mi}/\text{mi}^2$ ) with most of the road construction occurring in the upper one-third of the watershed. To date, 94.3 acres, or 7.5% of the watershed has been harvested. WATBAL predicted sediment reached 425% over natural in 1986 and recovered to 0% over natural by 1993.

Wolman pebble counts were taken in Reach 2, upstream from the mouth of Blake's Fork in 1993, 1996, and again in 1999 (See Table 3). Instream sediment levels were high in 1993, decreased in 1996, and increased in 1999 to approximate 1993 levels. Blake's Fork, like many other streams on the Clearwater National Forest, was responding to the 1995-1996 floods. Baseline, or natural sediment levels in Blake's Fork are probably in the mid-twenties range (measured as percent fines 0-2mm and 0-4mm). Instream sediment levels decreased to the high teens in 1996 as a result of scouring of the channel and deposition of sediment in the floodplain when flows exceeded bankfull. Blake's Fork is scheduled for monitoring again in 2002.

TABLE 3. BLAKE'S FORK WOLMAN PEBBLE COUNT DATA

YEAR	% FINES 0-2MM	% FINES 0-4MM	D50 IN MM	D84 IN MM
1993	24.4	26.5	23 (Coarse Gravel)	38 (Very Coarse Gravel)
1996	15.1	19.6	20 (Coarse Gravel)	56 (Very Coarse Gravel)
1999	25.0	27.6	26 (Coarse Gravel)	73 (Small Cobble)

## LOCHSA RIVER

**DEADMAN CREEK** - In the Deadman Creek watershed, the middle and east forks have near baseline conditions. Road density in the Middle Fork Deadman Creek is 1.3  $\text{mi}/\text{mi}^2$ . There are no stream/road crossings in the Middle Fork Deadman Creek. In the East Fork Deadman Creek, road density is 1.1  $\text{mi}/\text{mi}^2$ ; there is one stream/road crossing. In contrast, the West Fork Deadman Creek has had moderate levels of management, including road development and timber harvesting. Road density in the West Fork Deadman Creek is 3.5  $\text{mi}/\text{mi}^2$ ; there are 19 stream/road crossings. These activities provide additional opportunity for sediment to be added to the streams.

Given the similar channel types (A3 and A3a), higher sediment levels are expected in this creek as a result of the management activities. Fine sediment, measured as Wolman pebble counts (See Table 2), appear to be slightly elevated. Sediment, measured as 2mm and finer, is 13.4%, 18.3%, and 17.7% of the substrate in the Middle Fork, East Fork, and West Fork Deadman Creeks, respectively. West Fork Deadman sediment (2mm) is less than East Fork Deadman, but higher than the Middle Fork. Fine sediment, measured as 4mm and less, was greater in West Fork Deadman Creek; Middle Fork Deadman – 20.9%; East Fork Deadman – 24.6%; and West Fork Deadman – 28.3%. Sediment levels in West Fork Deadman appear to be slightly elevated over baseline, if assumed that these three streams have the same baseline.

In conclusion, it appears that management activities, including road construction and stream crossings have little remaining effect on the fine sediment levels in the West Fork of Deadman Creek. Sediment levels in the mainstem Deadman Creek were generally lower than the tributary streams (See Table 2), indicating management activities in the West Fork Deadman Creek have done little to impact and load Deadman Creek

downstream. If impacts occurred during the construction of these roads in previous decades, there appears to be little evidence in the channels today of lingering effects.

**WALTON CREEK.** Walton Creek is a B3a channel in Reach 11 (Mouth) where the Wolman pebble count was taken. Instream sediment levels are 15.0% (0-2mm) and 22.4% (0-4mm). Management in Walton Creek began in 1971 with the construction of the 111 and 360 roads and has continued. The last major road construction in the watershed was the Goat Roost Road in 1998. To date, 14.4 miles of road have been constructed in the Walton Creek watershed and the road density is 1.3 mi/mi<sup>2</sup>. A total of 2.9% of the watershed has been harvested. According to WATBAL, sediment production peaked in 1973 at 492% over natural. In 1999, sediment production was 47% over natural.

A summary of Walton Creek channel stability and sediment data is listed in Table 4. Only the lower portion of the watershed has been disturbed with roads and timber harvesting. This corresponds to 1999 reaches 7 through 11 and 1993 reaches 1 through 5. Sediment levels are generally higher in the unmanaged portion of the watershed (Reaches 1A through 6) than in the lower managed portion of the watershed. Reasons for higher sediment (cobble embeddedness) include natural geology and stream energy. The lower portion of the watershed has greater stream energy to remove sediment.

Cobble embeddedness has increased in the lower managed portion of the watershed over 1993 levels. This could be related to management activities in the lower portion of the watershed or natural hydrologic conditions that have occurred over the past several years. The latter explanation is likely correct because the Goat Roost Road construction and maintenance was monitored over the past two years. Only a small amount of sediment was delivered to one tributary of Walton Creek by the construction of this road. This occurred at the single stream crossing on the Goat Roost Road and that sediment was trapped behind a silt fence and removed. It is more likely that the increase in sediment is the result of scouring in the headwaters (Reaches 1A through 6) during the 1995-6 flooding and downstream movement and deposition in latter years. Although sediment levels in Walton Creek (Reaches 7 through 11) have increased, stream bank and channel stability remain in good condition.

TABLE 4. WALTON CREEK - 1993 AND 1999 CHANNEL CONDITION

CHANNEL TYPE	1993 REACH	1993 CE <sup>1</sup>	1993 BANK STABILITY	1999 REACH	1999 CHANNEL STABILITY	1999 CE	1999 BANK STABILITY
A2a				1A	50 (Good)	36%	5.0
E4				1B	52 (Good)	78%	5.0
A2a				1C	50 (Good)	42%	5.0
B2				2A	73 (Good)	62%	5.0
B2a				2B	73 (Good)	53%	5.0
B2a				3	67 (Good)	43%	5.0
B2a				4	66 (Good)	39%	5.0
B2a				5	66 (Good)	51%	5.0
A2a				6	72 (Good)	31%	5.0
B2a	1	22%	5.0	7	60 (Good)	32%	5.0
B2a	2	31%	5.0	8	64 (Good)	35%	5.0
B2a	3	20%	5.0	9	70 (Good)	40%	5.0
B2a	4	30%	5.0	10	83 (Fair)	40%	4.9
B3a	5	30%	5.0	11	71 (Good)	40%	5.0

## UPPER NORTH FORK OF THE CLEARWATER RIVER

**WEITAS CREEK TRIBUTARIES:** Several streams in the Weitas Creek drainage were monitored during the 1999 field season using two contract stream surveys. Most of these streams have been undisturbed by road building and timber harvest. Larch Creek and Camp Creek have been logged. Larch Creek has received moderate levels of road building and timber harvest. There are 21.4 miles of roads in this 6.6 square mile watershed. Road density is 3.2 mi/mi<sup>2</sup>. To date, 1,567 acres have been harvested in the Larch Creek watershed, or 37.1% of the watershed. According to WATBAL, sediment production in the Larch Creek watershed peaked at 117% over natural in 1964. In 1999, sediment production was 16% over natural. Current sediment levels in Larch Creek are higher than four other baseline watersheds with similar, B3a channel types (See Table 5). Although instream fine sediment levels are relatively low in Larch Creek (4.6% 0-2mm and 5.6% 0-4mm), they are still, most likely, elevated over natural or baseline sediment in this stream.

TABLE 5. MANAGED AND UNMANAGED B3A STREAMS IN THE WEITAS DRAINAGE

MANAGEMENT	STREAM	% FINES 0-2MM	% FINES 0-4MM	D50 IN MM	D84 IN MM
Timber Sales	Larch Creek	4.6	5.6	108 (Small Cobble)	340 (Small Boulder)
Baseline	Smith Creek	0.6	1.2	123 (Small Cobble)	334 (Small Boulder)
Baseline	Doris Creek	2.4	4.3	79 (Small Cobble)	235 (Large Cobble)
Baseline	Fox Creek	3.4	5.3	185 (Large Cobble)	515 (Medium Boulder)
Baseline	Davis Creek	2.4	4.3	79 (Small Cobble)	235 (Large Cobble)
Baseline	Young Creek	13.5	16.6	151 (Large Cobble)	565 (Medium Boulder)
Mean of Base-line Streams		4.5	6.3		

The Cabin Creek watershed has received light levels of road construction and timber harvest in the upper one-third of the watershed. Sediment levels in Cabin Creek are higher than two other baseline B4a channels, but less than Seat Creek, another B4a channel type (Table 6). Based on this limited data set, there does not appear to be a measurable increase in fine sediment in Cabin Creek.

TABLE 6. MANAGED AND UNMANAGED B4A STREAMS IN THE WEITAS DRAINAGE

MANAGEMENT	STREAM	% FINES 0-2MM	% FINES 0-4MM	D50 IN MM	D84 IN MM
Timber Sales	Cabin Creek	7.2	9.3	42 (Very Coarse Gravel)	83 (Small Cobble)
Baseline	Buck Creek	5.6	6.3	58 (Very Coarse Gravel)	134 (Large Cobble)
Baseline	Bighorn Creek	3.8	6.3	43 (Very Coarse Gravel)	105 (Small Cobble)
Baseline	Seat Creek	29.2	42.8	6.3 (Fine Gravel)	29 (Coarse Gravel)
Mean of Base-line Streams		12.9	18.6		

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# ROAD OBLITERATION PROGRAM

## Goal

The goal of road obliteration on the Clearwater National Forest is to reduce watershed impacts by reclaiming roads that are no longer a necessary part of the Forest's transportation system. The primary objectives for the Forest's obliteration program are:

- **Reduce erosion from road surfaces and slopes and related sedimentation of streams.**
- **Reduce the risk of mass failures and subsequent impact on streams.**
- **Restore natural surface and subsurface drainage patterns.**
- **Use road maintenance funds more effectively - concentrate the available funds on roads that are needed for long-term access.**

## Accomplishments/Findings

Obliteration is designed to significantly reduce, if not eliminate mass failure risks, promote continuous drainage, revegetate eroding areas, and leave the area ready to be reforested or able to reforest naturally. Based on field information about the roads' condition, a road to be eliminated is targeted either for abandonment or some level of obliteration.

A road to be **abandoned** is already stable and revegetating naturally. No physical work is required for abandonment, just a change in the database to reflect the fact that it no longer will be tracked as a road. However, roads to be **obliterated** will require some physical work in addition to the database change. The extent of obliteration work required is classified in four levels.

**Level 1. Recontouring at the start of the road to restrict vehicle access.**

**Level 2. Some work required along the road to address mass failure or erosion risk factors.**

**Level 3. Substantial work required along the full length of the road.**

**Level 4. Recontouring of most of the road.**

Generally, the following work is performed in Obliteration Levels 2 through 4. Culverts are removed. Fills are removed in the area around live streams and stream channels are restored to their original grade. Ditches are eliminated and the road surface is strongly outsloped or recontoured to provide continuous drainage. Road surface may be decompacted to promote tree growth. Disturbed areas are grass seeded, and fertilized. Erosion control blankets are installed at sensitive locations such as near stream crossings to control surface erosion. Other disturbed areas receive straw mulch, native woody debris mulch, or a scattering of logs and stumps. Native forbs, shrubs and duff excavated during outsloping or recontouring are transplanted into the disturbed areas. At completion, the area will no longer convey vehicle traffic, and requires no maintenance.

In FY99, 83.5 miles of road were obliterated at a cost of \$8,965 per mile. This cost includes equipment, materials, labor and project administration and inspection.

<b>YEAR</b>	<b>RECONSTRUCTION (Miles)</b>	<b>NEW CONSTRUCTION (Miles)</b>	<b>OBLITERATION (Miles)</b>
1987	20.1	18.9	0
1988	45.4	49.2	0
1989	77.6	34.7	0
1990	39.8	31.5	0
1991	61.4	36.1	0
1992	66.4	37.2	9.5
1993	45.3	3.8	2.6
1994	61.6	8.6	1.4
1995	108.9	1.5	9
1996	72.0	1.8	15
1997	7.6	1.0	52
1998	85.3	1.1	134
1999	19.8	1.0	83.5
<b>TOTAL</b>	<b>711.2</b>	<b>226.4</b>	<b>307.0</b>

In addition, in FY99, 19.8 miles of roads were reconstructed. Roads are generally reconstructed to improve drainage and to improve the road surface, to eliminate erosion problems and surface, to eliminate erosion problems, and to improve the driving surface and eliminate slumpy areas. While roads are being reconstructed, culverts are being replaced to properly accommodate high flow events and to improve fish passage where needed.

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## ROAD OBLITERATION EFFECTS

### Goal

Monitoring goals are developed to provide feedback for watershed restoration management to determine the effectiveness of methods used in road obliteration. Monitoring shows if treatments are effective in:

- Controlling surface erosion
- Restoring natural surface and subsurface drainage patterns
- Restoring slope stability

### Accomplishments/Findings

This monitoring program examined treatments used in road obliteration to determine their effectiveness in reducing mass failure risks, promoting continuous drainage, controlling surface soil erosion through revegetation, and leaving the area ready to be reforested. Monitoring was initiated in late 1998 when six permanent monitoring sections were established. In 1999, 14 new sections were added; 10 more will be added in each subsequent year. Sections will be monitored for each of the first three years, the fifth year, then at five-year intervals thereafter. Road obliteration treatments along the monitored segments included: 1) general road treatments, 2) mulch, 3) reconstructed stream channels (after culvert removal), 4) cross drain channels, 5) vegetation treatments, and 6) erosion control blankets.

In addition, 10 transects were set-up to monitor, 7) effects of fertilization. Finally, a pilot study was initiated to determine, 8) amount of sediment produced during road obliteration, focusing on channel restoration. This monitoring establishes baseline data to determine trends in the effectiveness of road obliteration treatments.

- 1) **GENERAL ROAD TREATMENTS:** General road treatments included out-sloping, recontouring, abandonment and decompaction of roads to restore slope stability and drainage patterns. A full recontour involves reestablishing the natural contours of the hillside, restoring the original topography. Out-sloping involves pulling up fills and decompacting road surfaces, leaving a cross slope of generally 10% to 30%. Decompaction or ripping involves reducing soil density to allow for water infiltration and plant growth. Stable sections of roads that are already vegetated may be abandoned. To date, 12.4% of obliterated road surfaces are decompacted, 44.4% of obliterated road surfaces are out-sloped, 33% of obliterated road surfaces are fully recontoured and 10.3% of obliterated road surfaces are abandoned.

In conclusion, general road obliteration treatments are successfully restoring slope stability, slope hydrology, and controlling surface erosion by treating problems associated with older, mostly unmaintained roads. Some benefits include removing log and slash fills or saturated fills that were built on slopes too steep to remain stable. Surface erosion is controlled with the active application of mulch and establishment of vegetation.

- 2) **MULCH:** Native woody debris (native brush and trees that grow on and along the roadside) and weed free straw are used as mulch. Mulch protects the soil from the effects of wind, rain, and the hot sun. It helps build soils and safeguards soils from surface erosion. The forest goal is to leave 75% - 100% of obliterated roads with a mulch layer. Monitoring results averaged from 20 sites across the forest are as follows:
  - a) Native woody debris mulch is used on 67.5% of obliterated road surfaces;
  - b) Straw mulch is used on 25.2% of obliterated road surfaces, and;
  - c) Bare ground is left on 7.3% of obliterated road surfaces.

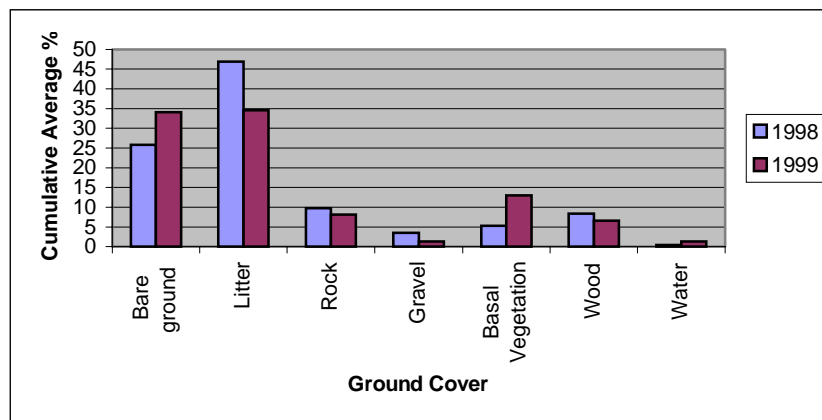
Monitoring results also show that areas mulched with straw are highly effective in promoting vegetative growth and in preventing soil erosion. Areas mulched with native vegetation have a low to moderate success in vegetative growth and a mixed rating showing either low or high results in controlling soil erosion.

- 3) **RECONSTRUCTED STREAM CHANNELS:** During road obliteration, stream channels are reconstructed to their natural grade by removing all placed fill. During this process, erosion control crews use the previously described methods to control on-site erosion. They also install downstream sediment traps to capture sediment that leaves the work site. Reconstructed stream grade channels are monitored to determine if treatments are effective in leaving channels in a stable condition. Channel cross-section and longitudinal profile surveys are used to determine the stability of reconstructed stream channels. At this time, the number of channels with two years data to establish trends is very limited. Additional information will be provided in next years monitoring report.
- 4) **CROSS DRAIN CHANNELS:** Cross drain channels are drainage paths constructed in areas with no defined stream channel or where a road may disrupt natural drainage. Cross drain channels are constructed to aid drainage from seeps, swales, undefined draws and other potentially wet areas with no defined stream channel. Monitoring shows that 59% of cross drain channels are draining seeps, 35% are draining swales or undefined draws, and 6% are draining other wet

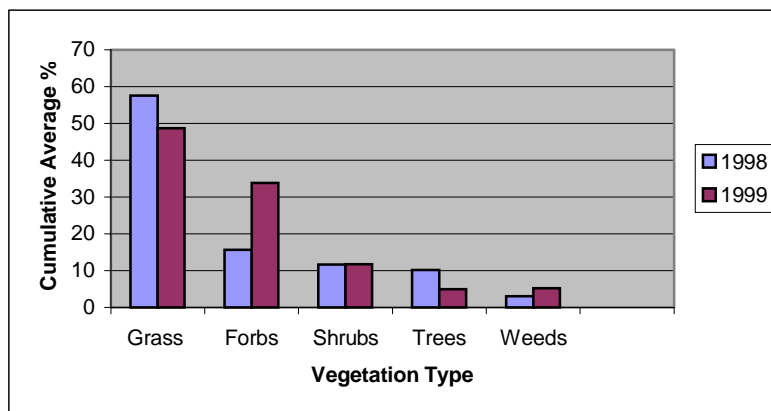
areas. Cross drain channels are installed on slopes ranging from 2 - 45% with the average being 32%. Establishment of vegetation in cross drain channels aids in controlling soil erosion. Mulch is also effectively used in cross drain channel to control soil erosion.

- 5) **VEGETATION TREATMENTS:** All obliterated roads are seeded with grass to control surface erosion until native plants have time to establish. The seed mixture is designed to be aggressive in the short term but not persistent over time. This is done to reduce competition with native species over time. Additionally, the duff layer, including reproductive parts of native plants, is pulled down from the cut slope and spread across the former road surface. This promotes the production of native plants. To measure the effectiveness of vegetation and other ground covers in controlling surface soil erosion, the **LINE INTERCEPT** (Figure 1) method is used. **DENSITY DATA** (Figure 2) is also collected to track native plant succession.

**FIGURE 1. LINE INTERCEPT DATA.** Comparison of the percent of area in selected ground cover classes for 1998 and 1999.



**FIGURE 2. DENSITY DATA.** Comparison of the percent of vegetative types for 1998 and 1999.



From the LINE INTERCEPT DATA, in the second year the amount of available litter declines. This can be attributed to the decomposition of mulch materials. At the same time, the amount of bare ground increases but is offset somewhat by the increase in basal vegetation. It takes time for the benefits of restoration to be expressed in noticeable results. However, the DENSITY DATA shows that, as planned, over time the grass mix is not persistent and in the second year native species in the form of forbs are increasing significantly.

- 6) **EROSION CONTROL BLANKETS:** Erosion control blankets are manufactured mats made of straw or coconut fibers and are held together by cotton or synthetic fibers.<sup>1</sup> They are used to control soil erosion until vegetation can become established. Erosion control blankets are generally installed in stream grade channels, cross drain channels and other wet or potentially wet areas as needed.

Erosion control blankets were installed on slopes averaging 30%. After one year, decomposition averages 56%.<sup>2</sup> Pins, rocks and slash provide high success in anchoring erosion control blankets. In the center of channels, 55% of erosion control blankets are installed; 45% are installed on channel side slopes. Erosion control blankets show high success in preventing soil erosion the first season and moderate success the second season. Vegetative success the first season is moderately high and moderate the second season.

- 7) **APPLICATION OF FERTILIZERS:** In an attempt to determine if the application of chemical fertilizer is warranted, ten transects were sampled across the forest. Results were compared between chemical fertilizer, biosol (an organic fertilizer) and areas with no fertilizer. Areas were sampled with 100 foot transects broken into 10 plots of 25 x 50 centimeters. Sampling included the number of plants, the height of plants in cm. and the percent cover.

Results are mixed and require some explanation. The sample areas were not planned, with the exception of the only two areas using biosol. They were areas that for one reason or another did not get fertilized. The fertilized and non-fertilized transects are direct comparisons. The two transects with biosol do not reflect conditions encountered in other sample areas across the forest. This data is not statistically significant but can be used to demonstrate trends (Figure 3). During these surveys, it was observed that areas without fertilizer generally had more native species and less weedy species.

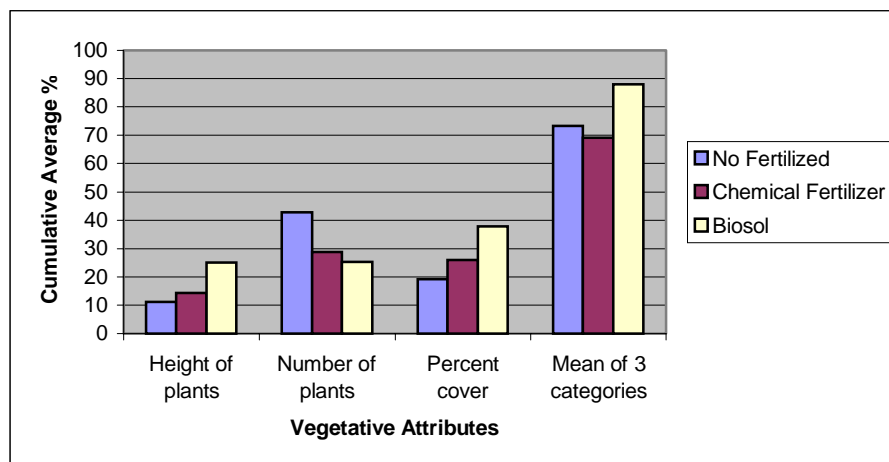
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<sup>1</sup> Synthetic fiber erosion control blankets have not been used since 1998 because they have a longer life, which is undesirable, than the natural fiber blankets.

<sup>2</sup> Decomposition is desirable after the first year as native vegetation takes over erosion control at the site.



**FIGURE 3.** Comparison of selected treatments on three vegetative attributes during 1999.



- 8) **SEDIMENT PRODUCTION:** In 1999, a pilot study was undertaken to quantify the level of sediment generated as a result of road obliteration. Specifically, the Forest used automatic water samplers (ISCO's) to monitor small perennial streams that were recontoured during obliteration of road crossings. Automatic water samplers were installed above and below road-stream crossings to determine suspended sediment and turbidity concentrations. The pilot study revealed problems in sample design that translated into questionable data results. ISCO's were installed in very small shallow streams that had fluctuating streamflows. At times, ISCO intakes were found above the water level, thus no sample was collected. At other times, the intakes were observed on or near the channel bottom, thus collecting bedload from the stream. It was not always possible to sort out which samples included bedload, and as such, it is believed some of the data presented in this report is erroneous. However, trends and general conditions found are believed to be of value to assist in improving the road obliteration program. Conclusions presented will most likely change when additional data is collected in subsequent years. Recommendations for changing the monitoring strategy based on observed sampling problems will be presented at the end of this section.

Sediment and turbidity data was collected to satisfy water quality questions from funding agencies concerning the merits of road obliteration. Suspended sediment and turbidity samples were collected at a reconstructed stream channel site in the Doe Creek watershed. Streamflow at this site was less than 0.5 cubic feet per second during channel recontouring. This is a very small headwater stream. In the Doe Creek watershed road obliteration project, 25 samples were collected (one composite per hour<sup>3</sup>) over a period of two days, 50 feet above and below a reconstructed stream channel site using two automatic water samplers (Table 1). Samples were collected before, during, and after road obliteration, during a rainstorm, and during sediment trap removal. The project consisted of reconstructing a perennial stream to the natural grade and removing failed wooden culverts. It was not possible to completely dewater the site because of the failed wooden culverts and saturated fills that existed.

<sup>3</sup> A composite sample consists of four samples, one collected every fifteen minutes and combined into one bottle per hour.

As can be seen in Table 1, suspended sediment and turbidity downstream of the road obliteration project was higher than the upstream control during excavation. Some recovery occurred after the road obliteration project was completed, until it rained on August 2, 1999.<sup>4</sup> Sediment increased again during the sediment trap removal. In fact, samples collected during the trap removal had the highest concentration of sediment collected at the site. The first turbidity sample that exceeded the State water quality instantaneous turbidity standard of 50 NTUs was collected during the sediment trap removal on August 2, 1999 at 11:00 a.m. Turbidity samples far exceeded the State standard during the sediment trap removal. Approximately one ton of erosion was collected in a sediment trap. These results indicate sediment generated during road obliteration was both suspended and bedload.

**TABLE 1. Comparison of suspended sediment and turbidity concentrations during six time periods at two sample locations at a road obliteration site in the Doe Creek drainage – August 1999.**

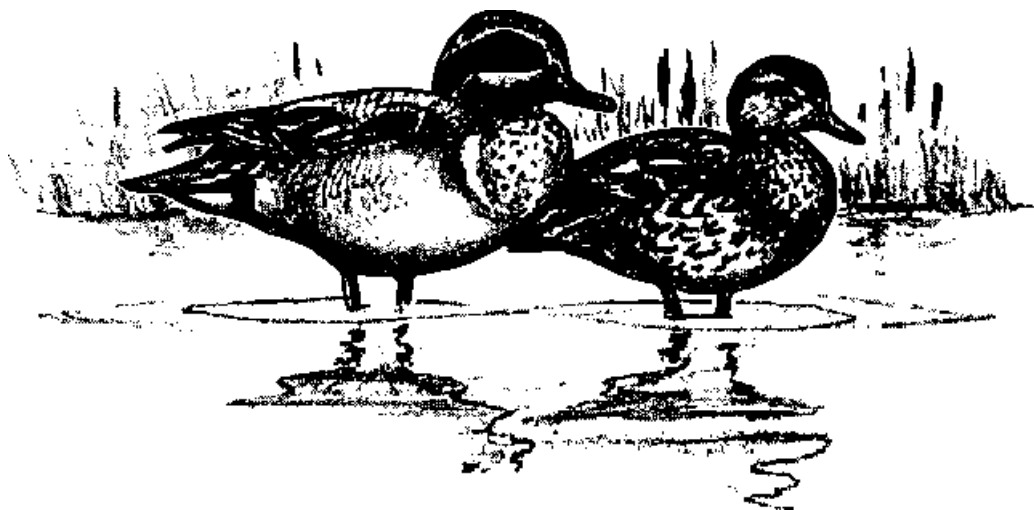
Date/Time	Notes	Upstream/Control Sediment – mg/l	Upstream/Control Turbidity NTU	Downstream Sediment mg/l	Downstream Turbidity NTU
8/1/99 2 PM	Before Obliteration	5.8	3.2	8.2	3.8
3 PM	"	5.4	2.7	28.2	7.3
4 PM	During Obliteration	3.5	4.8	18.2	7.0
5 PM	"	3.9	2.1	17.1	9.0
6 PM	"	5.8	1.5	28.8	19.1
7 PM	"	5.9	1.3	74.1	47.5
8 PM	After Obliteration	3.6	2.0	31.8	20.2
9 PM	"	3.9	1.2	17.2	14.7
10 PM	"	4.7	1.7	16.1	11.9
11 PM	"	4.5	1.7	13.9	8.9
12 Midnight	"	4.3	1.4	7.8	8.5
8/2/99 1 AM	"	5.1	1.4	11.1	7.0
2 AM	"	4.1	1.9	9.4	4.5
3 AM	"	4.9	2.2	7.8	3.4
4 AM	"	4.9	1.6	11.7	3.2
5 AM	"	5.3	1.3	13.7	5.0
6 AM	Rain	4.1	1.6	45.8	37.8
7 AM	Sediment Trap Cleaning	4.5	0.8	415.6	748
8 AM	"	3.5	1.9	1,564	> 1,000
9 AM	"	4.1	3.9	4,043	> 1,000
10 AM	"	4.9	2.4	898	> 1,000
11 AM	After Sediment Trap Cleaning	5.3	1.4	434	361
12 Noon	"	4.7	0.8	276	195
1 PM	"	5.9	1.2	216	196
2 PM	"	2.2	1.1	266	183

In conclusion, road obliteration at reconstructed stream channel sites will produce higher concentrations of suspended sediment and turbidity, but mitigation measures usually minimize the downstream effects. Although Forest engineers do their best to completely dewater the site, this is not always possible. State turbidity standards are occasionally exceeded for short durations. Temporary increases in sediment are a necessary tradeoff when removing large, unstable, or saturated road fills that have the potential for doing much harm to downstream fisheries if not treated and removed. Based on the data collected in 1999, it is recommended that road obliteration work continue, that sites be dewatered to the extent practical, and that sediment traps be dewatered and removed only during dry weather periods.

<sup>4</sup> On August 2, approximately 0.3 inches of rain was recorded at the Lolo Pass SNOTEL site; 0.12 inches of rain was recorded at the Powell RAWS site and 0.18 inches at the Roundtop RAWS site.

The pilot study sample design must be modified to obtain more accurate results. Instead of using automatic water samplers in the very small streams where the obliteration is occurring, these instruments should be installed downstream in the main fisheries streams, one above and one below the confluence of the mainstem and obliteration channel. ISCO samples should be collected at one-hour intervals starting a minimum of two hours before excavation and running into the next day. Great care should be taken to set the intakes to collect suspended sediment and not air or bedload. In the smaller headwater streams where obliteration is occurring, grab samples should be collected above and below the project work sites. A minimum of one sample each, (above and below) should be collected before the excavator moves onto the site, two samples should be collected during excavation, and three samples should be collected at one-half hour intervals after excavation is complete. At a minimum, one additional sample should be collected the following day to determine if recovery of suspended sediment and turbidity has occurred. Great care needs to be taken to avoid contamination of the samples with sediment during collection.

In 1999, sediment traps at the monitoring sites were installed and removed by those responsible for doing the monitoring. In 2000, the erosion control crews responsible for road obliteration will be doing all the sediment trap work and those responsible for obliteration monitoring will strictly do monitoring. Next field season, plans are to more accurately determine the amount of erosion and sediment generated and the time it takes for complete recovery to natural sediment conditions.



# ROADS

## Item No. 13 - Miles of Road Open/Restricted

Frequency of Measurement: **Annual**  
Reporting Period: **Five Years**

### Monitoring Action

The Forest engineer will annually review total miles of road on the Forest and display the data to show miles of open roads and miles of restricted roads. The restricted road information will be broken down to show roads that are closed yearlong to all vehicle traffic and roads that are restricted for some part of the year.

### Accomplishments/Findings

The Forest development road system on the Clearwater National Forest is made up of roads that vary from narrow single-lane unsurfaced to double-lane paved roads. This system of approximately 4,612 miles provides access to all major areas of the Forest. Road restrictions are a major component in resource protection. Driven by resource needs, including habitat needs of big game and water quality, road restrictions are reviewed annually and revised when necessary to meet the current management situation.

#### MILES OF RESTRICTED AND OPEN ROADS

RESTRICTED			METHOD OF CLOSURE				OPEN
DISTRICT	Yearlong (miles)	Seasonal (miles)	Gates	Guardrail	Earthen Barrier	Posted: Sign Only	Year-round, weather permitting
Pierce	390	200	140	69	49	37	534
Palouse	166	451	74	41	71	34	350
North Fork	470	152	67	42	135	24	628
Lochsa	245	44	80	53	45	18	126
Powell	410	101	44	48	129	17	345
<b>TOTAL</b>	<b>1,681</b>	<b>948</b>	<b>405</b>	<b>253</b>	<b>429</b>	<b>130</b>	<b>1,983</b>



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# SCENIC RESOURCES

## Goal

In association with other resource management activities, maintain a natural appearing forest landscape as viewed from designated visual travel corridors, recreation sites, wilderness, high-use recreation areas and administrative areas.

## Strategy

The Forest landscape architect and District personnel will review proposed management activities; provide input when proposed management activities are located in the viewshed of designated visual travel corridors, recreation sites, wilderness, high use recreation areas and administrative areas; and recommend actions that will meet Forest Plan *scenic integrity objectives* (formerly referred to as Visual Quality Objectives). Management activities will be monitored during implementation and at completion for success in meeting *scenic integrity objectives* (SIOs).

### Item No. 3 Visual Quality Objectives

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Frequency of Measurement: **Annual**  
Reporting Period: **Five Years**

## Monitoring Action

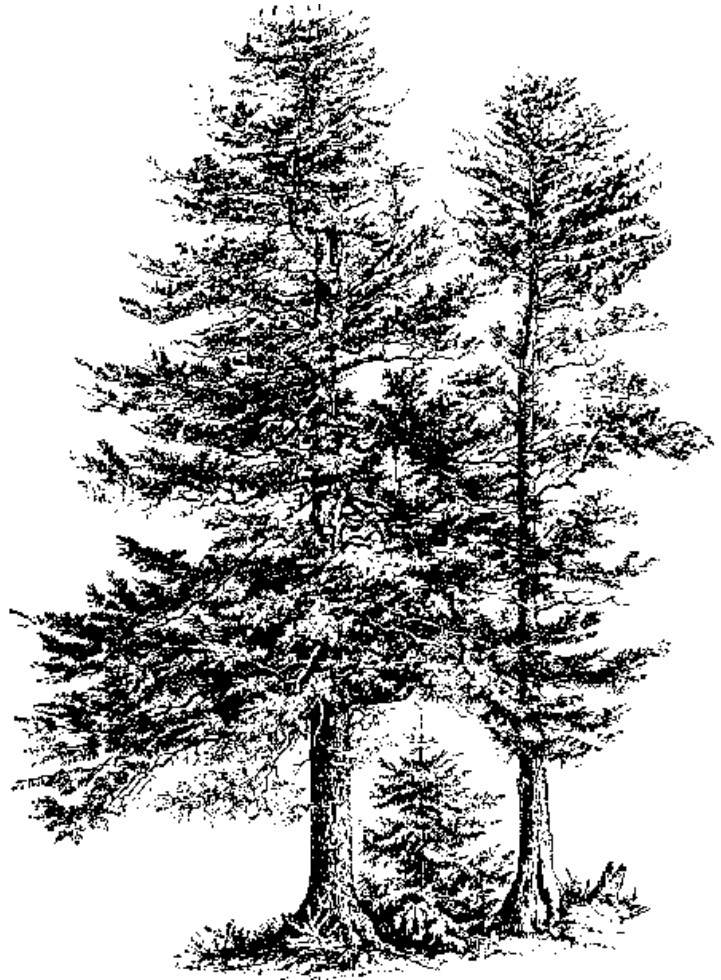
The Forest landscape architect, assisted by District personnel reviewed all of the current year's completed timber harvesting activities to determine if SIOs were met for FY99. Other management activities that were monitored for their effects on the scenic resource were selected campground construction projects, road maintenance projects, and road obliteration projects. The monitoring process included field observations of selected management activities and an office review of project reports.

## Accomplishments/Findings

The Forest landscape architect and District personnel designated as the scenic resources contact provided input to District Rangers by serving on interdisciplinary teams (IDT) for timber harvesting proposals, recreation projects, watershed analysis and sub-basin assessments. Recommendations were provided in the documentation for these projects for practices that would aid the Districts in meeting SIOs on several proposed management actions. These activities will continue to be monitored during the implementation phase of the project.

A total of 19 timber sales were completed and closed out in FY99. Approximately 11% of the sales were located in areas with a *High* SIO (*VQO of Retention*), 26% were in areas with a *Moderate* SIO (*VQO of Partial Retention*), 10% were in areas with a *Low* SIO (*VQO of Modification*), and the remaining 53% were located in areas with a *Very Low* SIOs (*VQO of Maximum Modification*).

Of the activities reviewed, 12 sales were minor roadside salvage projects that had no affect on scenic quality of the area. Only scattered dead and dying trees were removed and, in most, cases these activities improved the appearance of the area. On the North Fork Ranger District, three sales removed damaged trees following a natural event (see DWORSHAK BLOWDOWN below) such as a fire, windstorm or disease outbreak. Of the remaining projects, two were larger sales with areas of regeneration harvest and one sale included overstory removal and commercial thinning. While several projects had harvest areas that were easily visible from low use travel corridors or in background views from more prominent sites, all of the activities met the criteria for SIOs designated in those areas. In some cases, projects exceeded the Forest Plan SIOs designated for the area or rehabilitated past activities.



Three campground reconstruction projects were completed in FY99. Major renovations were completed in Noe Creek, Kelly Forks, and Hidden Creek Campgrounds. There was a concern with the work proposed at Noe Creek Campground; a number of trees were removed due to an insect problem. Trees were removed and the stumps were treated in such a way that there was very little evidence of change. This site will be monitored in the future. Additional trees of various species will be planted. All work was completed at the other campgrounds with minor changes to the existing landscape and all campground projects met the SIOs of *High* (*VQO of Retention*) designated for the area.

Another area of concern (retention of scenic quality of forested landscape) is in road management. Currently, the Forest is completing a number of road obliteration projects. It is anticipated that the work will rehabilitate the scenic quality of the area in addition to improving watersheds. Selected projects are observed to determine if road obliteration can be used as an effective tool in rehabilitating an area where scenic quality does not meet Forest Plan standards.

Following are some examples of projects that protected or enhanced the scenic character of travel corridor viewsheds on the Forest.

- **DWORSHAK BLOWDOWN SALVAGE SALE**, located on the North Fork Ranger District, was designed to salvage blowdown timber in a number of scattered locations near Aquarius Campground, and to remove blowdown within the modified area of a previous sale near Dworshak Reservoir. This removal met the SIOs of *Moderate (VQO of Partial Retention)* in the foreground viewing zone from Forest Road 247 and the middleground viewing zones of Aquarius Campground and Dworshak Reservoir.
- **FUZZY BIGHORN TIMBER SALE**, located on the North Fork Ranger District, was designed improve the health of the coniferous vegetation adjacent to Forest Road 250 and Orogrande Creek. Mostly dead or dying white pine was removed. Helicopter yarding was used to reduce impacts to the area. Sale units were designed to emulate existing openings in the area and appeared quite natural when they were completed. This sale effectively exceeds the Forest Plan objective of *Very Low (VQO of Maximum Modification)* designated for the area. Additional harvesting in the area specifically designed to remove dead and dying timber did not adversely effect the scenic quality of the area.
- **FAN LUNCH SALVAGE SALE AND MEX MUD SALVAGE SALE** are located near the Lewis and Clark National Historic Trail corridor, Eldorado Creek and Road 500 on the Lochsa Ranger District. These were salvage sales designed to remove dead or dying vegetation and to do some commercial thinning. Both sales were successfully completed without any detrimental visual effect to the trail corridor. Both areas were well screened from the trail itself. These sales also met the SIOs of *Low (VQO of Modification)* from Road 500.

Additional information regarding effects on scenery of other FY99 management activities is available at the Supervisor's Office.



# SOIL AND WATER

## Goal

Manage watersheds and soil resources to maintain Forest Plan water quality standards that meet or exceed State and Federal standards. Protect all beneficial uses of water: fisheries, water-based recreation and public supplies. Ensure that soil productivity and stability are maintained.

## Strategy

Provide input and direction during management activity planning and implementation. Establish monitoring stations to determine the impacts of past and current management activities. Monitor the application and effectiveness of *Best Management Practices* (BMPs) during and after project implementation. Maintain an inventory of areas needing soil and water restoration. Restoration will be completed as funding allows. Develop cost-effective methods of evaluating sources of soil-productivity damage caused by compaction, displacement and severe burning.

### Item No. 8 Water Quality and Stream Condition for Fisheries and Non-Fisheries Beneficial Uses

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Frequency of Measurement: **Annual**  
Reporting Period: **Annual**

## Monitoring Action (Non-Fisheries)

This section deals with water quality and stream conditions for non-fisheries beneficial uses. To read about water quality and stream conditions for fisheries, please refer to the FISHERIES section.

The Forest hydrologist will coordinate with District personnel to establish water quality monitoring stations. These stations will collect data so as to monitor water quality to determine trends or impacts of past and/or current road construction, timber harvesting and mining activities.

## Accomplishments/Findings

The primary emphasis of Forest water quality monitoring has been to determine the effects of sediment and water yields from timber production and road construction on water quality and fisheries. Baseline monitoring and project water quality monitoring of streams has occurred in the following way. Baseline stations have been located at the mouths of large drainages, generally larger than five square miles. Water level recorders and automatic water samplers have been installed for continuous collection of information. Water level recorders track seasonal fluctuation of stream water levels. This information is calibrated to determine stream discharge. Automatic water samplers have been installed at most baseline stations to collect suspended sediment samples at predetermined intervals.



Project stations have been located downstream from management activities. Control stations (no activity) generally have been established upstream from activities, in a different but similar watershed, or at the same project station but prior to the activity. Project sampling allows the quantification of site-specific impacts, primarily sediment yield from a given activity. Data is collected at each project station with automatic water samplers. Parameters measured are stream flow, suspended sediment, turbidity, and instantaneous water level. Water level recorders and automatic samplers are normally in operation from March through September.

Table 1 shows the Forest's monitoring network by major drainage basin and watershed. The number of years of record and the type of monitoring station is also presented. Additional water temperature monitoring was done during the summer months at approximately 240 stations. Contact the Forest fisheries biologist for water temperature information, or the hydrologist for sediment, turbidity, stream flow or precipitation information.

TABLE 1. WATER QUALITY MONITORING NETWORK

BASIN	WATERSHED - LOCATION	YEARS OF RECORD	DATA TYPE
Palouse River (17060108)	Palouse River (Blw Little Sand)	19	Suspended Sediment, Discharge
Lochsa River (17060303)	Walde Creek (Walde Lookout)	33	Annual Precipitation
	Crooked Fork	20+	Snow Course
	Crooked Fork (Lolo Pass)	20+	SNOTEL, Precipitation (NRCS)
	White Sand Creek (Savage Pass)	20+	SNOTEL, Precipitation (NRCS)
	Lochsa River	74	Discharge (USGS)
	Crooked Fork	20	Discharge <sup>3</sup>
	White Sand	20	Discharge <sup>3</sup>
	Walton Creek	8	Sediment <sup>3</sup>
	Pete King Creek	24	Discharge, Suspended Sediment
	Canyon Creek	8	Discharge, Suspended Sediment
	Deadman Creek	19	Discharge, Suspended Sediment
	Fish Creek	8	Discharge, Suspended Sediment
	Squaw Creek	3	Discharge, Suspended Sediment
	W.F. Squaw Creek	3	Sediment
	Papoose Creek	3	Discharge, Suspended Sediment
	W.F. Papoose Creek	3	Sediment
Clearwater River (17060306)	Orofino Creek (Pierce R.S.)	20+	Snow Course
	Potlatch River	5	Discharge, Suspended Sediment
	Lolo Creek (Mouth)	21	Discharge, Suspended Sediment (USGS)
	Lolo (Section 6)	20	Discharge, Suspended and Bedload Sediment
	Eldorado Creek	9	Discharge, Suspended Sediment
Upper North Fork Clearwater River (17060307)	Cayuse Creek (Cayuse Landing)	33	Annual Precipitation
	Weitas Creek (Doris Butte)	29	Annual Precipitation
	Quartz Creek (Indian Henry Ridge)	1	Annual Precipitation
	North Fork of the Clearwater River (Aquarius Bridge)	33	Discharge (USGS)
	Quartz Creek	19	Discharge, Suspended Sediment
	Cold Springs Creek	1	Discharge, Suspended Sediment <sup>1</sup>
Lower North Fork Clearwater River (17060308)	Beaver Creek (Beaver Divide)	29	Annual Precipitation
	Isabella Creek	20	Discharge <sup>2</sup>
	Elk Creek	19	Discharge, Suspended and Bedload Sediment

<sup>1</sup> Cold Springs station installed in 1999. No data until 2000 report.

<sup>2</sup> Isabella Creek station discontinued.

<sup>3</sup> Crooked Fork, White Sands and Walton Creek stations discontinued October 1999 due to insufficient funding.

The Forest processed approximately 2,000 suspended sediment and 40 bedload samples in 1999. The sediment was combined with streamflow information using watershed computer programs to calculate sediment loading, or how much suspended sediment passes the monitoring station. Bedload sediment samples are also collected, however on a less frequent basis, to determine the proportion of sediment moving as suspended and bedload in the watershed. Total sediment load can be determined for the watershed with these measurements. This information is useful for determining the effects of activities and calibrating watershed models. This data is summarized in Table 2 and is available at the Forest Supervisor's Office.

Table 2 displays the period of record, mean discharge through 1998, 1999 discharge, mean suspended sediment through 1998, and suspended sediment in 1999<sup>1</sup>.

TABLE 2. WATER QUALITY MONITORING RESULTS

STATION	PERIOD OF RECORD	MEAN DISCHARGE (CFS) THROUGH 1998	1999 DISCHARGE (CFS)	MEAN SUSPENDED SEDIMENT THROUGH 1998 (MG/L)	1999 SUSPENDED SEDIMENT (MG/L)
Palouse River	81-99	81.2	121	8.1	3.0
Crooked Fork	80-99	424	488	*	*
White Sand Creek	80-99	723	843	*	*
Walton Creek	92-99	**	*	26.0	3.2
Pete King Creek	76-99	46.7	41.7	20.3	6.8
Canyon Creek	92-99	47.9	**	11.3	2.8
Deadman Creek	80-99	46.6	46.7	22.9	3.4
Fish Creek	92-99	211	261	17.8	3.6
Squaw Creek	89-91	49.2	55.6	9.6	2.3
	95-99				
WF Squaw Creek	96-99	16.3	11.1	5.0	1.4
Papoose Creek	95-99	89.4	75.2	55.5 <sup>1</sup>	6.3
WF Papoose Creek	96-99	52.9	29.2	7.8	1.7
Potlatch River	95-99	261	174	12.4	6.3
Lolo Creek (Mouth)	91-99	329	402	9.9	3.1
Lolo Creek (Sec 6)	80-99	97.9	108	10.0	3.2
Eldorado Creek	91-99	64.0	63.7	7.2	2.9
Quartz Creek	81-99	147	**	11.8	3.1
Elk Creek	81-99	83.2	86.0	8.1	3.5

\* Data not collected at this site.

\*\* Data unavailable at time of publication.

<sup>1</sup> Suspended sediment mean is high due to fewer samples collected during the year that were collected during spring snowmelt.

Generally, monitoring of suspended sediment from past activities has shown a recovery trend forestwide. Suspended sediment concentrations tended to be less in the 1990s than in the 1980s. Much of the recovery is believed to be the result of less land disturbing activities, better application of BMPs, and better road location and design. In some watersheds, an increase in suspended sediment in 1996 and 1997 has been associated with the floods, landslides, and above normal snowpack.

**ELK CREEK SUSPENDED AND BEDLOAD SEDIMENT** – 1997 and 1998 suspended and bedload sediment was analyzed for Elk Creek (See Table 3). Bedload varies from a high of 26.9% to a low of 0.2% of the total sediment load. Mean bedload for 1997, based on eight samples was 451 pounds per day, or 2.1% of the total sediment load. Mean bedload for 1998, based on 22 samples was 92 pounds per day, or 6.3% of the total sediment load. At least at Elk Creek, bedload sediment seems to be almost a negligible portion of the total sediment load of the stream.

TABLE 3. ELK CREEK SUSPENDED AND BEDLOAD SEDIMENT DATA FOR 1997 &amp; 1998. A COMPARISON OF DISCHARGE, DEPTH INTEGRATED SUSPENDED SEDIMENT, AND BEDLOAD SEDIMENT.

DATE	Q - CFS	SUSPENDED SEDIMENT LBS/DAY	% SUSPENDED SEDIMENT	BEDLOAD LBS/DAY	% BEDLOAD	TOTAL SEDIMENT LBS/DAY
3/19/1997	141.1	4,649	85.4%	796.6	14.6%	5,446
3/27/1997	222.0	18,701	98.1%	372.3	1.9%	19,073
4/3/1997	136.0	2,681	85.5%	454.2	14.5%	3,135
4/15/1997	199.0	78,244	99.8%	121.3	0.2%	78,244
4/21/1997	567.0	18,064	97.4%	474.8	2.6%	18,539
4/23/1997	554.2	23,600	96.8%	779.0	3.2%	24,379
5/13/1997	573.4	16,411	97.7%	393.1	2.3%	16,804
5/27/1997	328.0	9,740	97.8%	214.2	2.2%	9,954
<b>Mean 97</b>	<b>340 cfs</b>	<b>21,511 Lbs/day</b>	<b>97.9%</b>	<b>451 Lbs/Day</b>	<b>2.1%</b>	<b>21,962 Lbs/day</b>
3/6/1998	56.9	921.3	73.1%	338.4	26.9%	1,260
3/19/1998	86.1	1,442	95.0%	76.0	5.0%	1,518
3/31/1998	106.7	864.3	94.0%	55.0	6.0%	919.3
4/6/1998	147.5	557.5	86.7%	85.3	13.3%	642.8
4/8/1998	128.0	2,005	97.3%	55.5	2.7%	2,060
4/10/1998	119.3	1,546	96.6%	54.2	3.4%	1,600
4/13/1998	107.0	1,329	97.2%	38.9	2.8%	1,368
4/15/1998	104.3	1,239	92.9%	93.6	7.1%	1,333
4/17/1998	101.8	1,155	97.3%	32.7	2.7%	1,187
4/20/1998	108.1	933.8	88.8%	118.3	11.2%	1,052
4/22/1998	133.2	1,726	98.4%	28.1	1.6%	1,754
4/27/1998	128.2	1,800	88.1%	243.9	11.9%	2,044
4/29/1998	146.7	3,011	97.0%	94.1	3.0%	3,105
5/7/1998	121.9	2,172	93.2%	159.1	6.8%	2,331
5/11/1998	94.5	2,245	97.1%	66.7	2.9%	2,312
5/20/1998	85.0	963.3	95.8%	41.9	4.2%	1,005
5/27/1998	167.5	2,261	85.3%	390.1	14.7%	2,651
6/4/1998	103.3	1,674	97.5%	42.3	2.5%	1,716
6/18/1998	69.0	816.3	99.8%	1.97	0.2%	818.3
7/1/1998	52.8	427.3	99.1%	3.93	0.9%	431.2
7/14/1998	42.5	229.2	97.1%	6.84	2.9%	236.0
8/24/1998	25.8	599.5	99.8%	1.03	0.2%	600.5
<b>Mean 98</b>	<b>97 cfs</b>	<b>1,360 Lbs/day</b>	<b>93.7%</b>	<b>92 Lbs/Day</b>	<b>6.3%</b>	<b>1,452 Lbs/day</b>

**1999 PRECIPITATION MEASUREMENTS** - The Forest maintains five yearly catch precipitation stations for the purpose of assisting the State Climatologist in developing isohyetal maps (maps of equal rainfall areas). The gages are located at Beaver Divide, Cayuse Landing, Doris Creek, Walde Lookout and Indian Henry Ridge. Beaver Divide received 58.48 inches or 111% of the period of record average. Cayuse Landing received 43.03 inches or 108% of average. Doris Creek received 48.19 inches or 114% of average. Walde Lookout received 55.52 inches or 117% of average. Records at these stations go back to 1966. A new station at Indian Henry Ridge was installed on October 27, 1999, or 27 days after the start of the water year. Precipitation for Indian Henry Ridge was 59.27 inches.

## Item No. 9 Best Management Practice (BMP) Applications

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Frequency of Measurement: **Annual**  
Reporting Period: **Five Years**

### Monitoring Action

The Forest hydrologist will coordinate with employees, including timber sale administrators, engineering representatives, contracting officer representatives, the Forest ecologist, the soil scientist, and fire management officers to monitor all projects for compliance with *Best Management Practices* (BMPs). BMPs are actions taken to minimize negative, detrimental or undesirable effects that may result from implementation of management activities and are defined in the Idaho Forest Practices Act. The primary objective of BMPs is the maintenance of water quality.

In addition, the Forest hydrologist will monitor 10% of timber sale units for BMP effectiveness. The Forest soil scientist/ecologist will monitor 100% of all new road construction for BMP implementation and effectiveness. The sale administrator and road contracting officers are responsible for BMP implementation.

### Accomplishments/Findings

In the summer of 1999, the Forest conducted an audit of the Idaho Forest Practices Act BMPs. The audit consisted of a review of 15 different timber harvest units and roads on all Districts. Units and roads were selected because of the soil or geology hazards or the presence of Class I or Class II streams. Timber sales and roads audited included Upper Palouse, Strychnine Intermediate, Mid-Skull Upper Bear, Relaskop Salvage, Smith Saddle, Deadman Salvage, Road 417, Cabin Country, Burnt Bear Salvage, and the Goat Roost road.

Table 4, 1999 Forest Practices Act Internal Audit, includes the following information

- **FPA# refers to the rule number in Rules Pertaining to the Idaho Forest Practices Act (Title 38, Chapter 13, Idaho Code);**
- **a description of the FPA rule;**
- **the number of BMPs that were observed Forest wide;**
- **the number of BMP observations that were in compliance with the FPA rules;**
- **the percent of BMP compliance;**
- **the number of occurrences where sediment or other pollutants were not delivered to a stream or draw; and**
- **the percent of BMP effectiveness.**

TABLE 4. 1999 FOREST PRACTICES ACT INTERNAL AUDIT DESCRIBING PRACTICE, NUMBER OF PRACTICES OBSERVED, IMPLEMENTATION RATE, AND EFFECTIVENESS RATE.

FPA#	DESCRIPTION	# OF CHECKS	IMPLEMENTED	% IMPLEMENTED	EFFECTIVE	% EFFECTIVE
030	<b>TIMBER HARVEST</b>					
030.03	<b>SOIL PROTECTION</b>					
a.	Skidding Erosion	4	4	100	4	100
b.	30% Limitation	4	4	100	4	100
c.1.	Number of Skid Trails	4	4	100	4	100
c.2.	Tractor Size Appropriate	4	4	100	4	100
d.	Cable Yarding	11	11	100	11	100
030.04	<b>LOCATION LANDINGS/SKIDS</b>					
a.	Locate Landings and Skid Trails out of SPZ	12	12	100	12	100
b.	Size of Landings	12	12	100	12	100
c.	Landing Fill Stabilization	12	12	100	12	100
030.05	<b>DRAINAGE SYSTEM</b>					
a.	Drainage Skid Trails	4	4	100	4	100
b.	Drainage Landings	12	12	100	12	100
030.06	<b>TREATMENT OF WASTE MATERIALS</b>					
a.	Slash out of Class I Streams	2	2	100	2	100
b.	Slash out of Class II Streams	12	12	100	12	100
c.	Soil out of SPZ	13	13	100	13	100
d.	Oil, Fuel out of SPZ	13	13	100	13	100
030.07	<b>STREAM PROTECTION</b>					
a.	Lakes - Riparian Management Px					
b.	Skidding, Stream Crossing SPZ	2	2	100	2	100
c.	Skidding in SPZ	2	2	100	2	100
d.	Cable Stream Crossing	9	9	100	9	100
e.1.	Hardwoods, Shrubs, Grasses, Rocks - Shade	3	3	100	3	100
e.2.	Class 1 - 75% Current Shade	3	3	100	3	100
e.3.	Logging of SPZ	2	2	100	2	100
e.4-8.	Large Organic Debris	3	3	100	3	100
030.08	<b>MAINTENANCE OF RELATED VALUES</b>					
c.	Wet Areas	12	12	100	12	100
040	<b>ROAD CONSTRUCTION AND MAINTENANCE</b>					
040.02	<b>SPECIFICATIONS AND PLANS</b>					
a.	Minimize Road Construction in SPZ	6	6	100	6	100
b.1.	Roads No Wider Than Necessary	6	6	100	6	100
b.2.	Minimize Cuts and Fills	6	6	100	6	100
c.	Disposal on Geologically Stable Areas	1	1	100	1	100
d.	Drainage Planned in Road	6	6	100	6	100
e.	Relief Culverts and Ditches	4	4	100	4	100

FPA#	DESCRIPTION	# OF CHECKS	IMPLEMENTED	% IMPLEMENTED	EFFECTIVE	% EFFECTIVE
f.1.	50 Year Culvert Design	4	4	100	4	100
f.2.	Relief Culvert Size	3	3	100	3	100
g.1.	Plan Minimum Stream Crossings	6	6	100	6	100
g.2.	Plan Culvert Fish Passage					
h.	Variance Procedure Followed					
040.03	<b>ROAD CONSTRUCTION</b>					
a.	Construction Followed Plan	6	6	100	6	100
b.	Debris Cleared From Drainageways	4	4	100	4	100
c.	Stabilize Exposed Areas	6	6	100	6	100
d.	Compact and Minimize Soft Material in Fills	6	6	100	6	100
e.	Stream Alteration Act	1	1	100	1	100
f.	Remove Berms on Outsloped Roads	6	6	100	6	100
g.	Quarry Drainage	1	1	100	1	100
h.1.	Minimize Erosion of Embankments at Culverts	4	4	100	4	100
h.2.	Install Drainage Prior to Runoff	4	4	100	4	100
h.3.	Relief Culvert Gradient	3	3	100	3	100
i.	Wet Weather Delays	4	4	100	4	100
040.04	<b>ROAD MAINTENANCE</b>					
a.	Sidecast Out of Streams	13	13	100	13	100
b.	Stabilize Slumps and Slides	10	10	100	9	90
c.	<b>ACTIVE ROADS</b>					
c.1.	Culvert and Ditch Function	8	8	100	8	100
c.2.	Crown and Waterbar	9	9	100	8	89
c.3.	Minimize Road Surface Erosion	9	9	100	9	100
c.4.	Oil Out of Streams	9	9	100	9	100
d.	<b>INACTIVE ROADS</b>					
d.1.	Culverts and Ditches Cleaned	1	1	100	1	100
d.2.	Road Closed	2	2	100	2	100
e.	<b>ABANDON ROADS</b>					
e.1.	Outslope, Waterbar, Seed	4	4	100	4	100
e.2.	Ditches Cleaned	2	2	100	2	100
e.3.	Road Closed	4	4	100	4	100
e.4.	Bridges and Culverts Removed	1	1	100	1	100
040.05	<b>WINTER OPERATIONS</b>					
a.	Adequate Cross Drainage	1	1	100	1	100
b.	Road Maintenance	1	1	100	1	100
	<b>SUMMARY</b>	<b>316</b>	<b>316</b>	<b>100%</b>	<b>314</b>	<b>99.4%</b>

There were 316 BMP observations in 1999 with an implementation and effectiveness rate of 100% and 99.4%, respectively. Sediment was observed as delivered to streams only twice in 316 BMP observations. Many BMPs continue to have a 100% implementation and effectiveness rate. BMPs that delivered sediment to streams in 1999 were:

- **040.04.b., "Repair and stabilize slumps, slides, and other erosion features causing stream sedimentation"; and**
- **040.04.c.2., "During and upon completion of seasonal operations, the road surface should be crowned, outsloped, insloped, or water barred, and berms removed from the outside edge except those intentionally constructed for protection of the fills."**

**040.04.b.** - Road 417 in the Pete King Creek watershed is located on 21-S10 and 31-S10 micaceous schists soils that have a moderate mass wasting hazard and sediment delivery efficiency. At one location, an unvegetated fill slope located over a Class I stream is eroding into the channel. This is a legacy problem that has existed for several years and is not associated with recent timber harvesting in the area.

**040.04.c.2.** - Water running down the road surface is going over the fill and into a Class I stream. There is inadequate drainage of the Road 417 surface that is contributing to water running down the surface and over the unprotected fill. This problem is at the same location as the fill slope erosion identified above.

The BMP in the 1999 audit were further analyzed by method of application:

- **aerial logging systems,**
- **tractor logging, and**
- **temporary and system road design, construction, and maintenance.**

The audit included 98 observations of BMPs where aerial logging systems were applied. The implementation and effectiveness rates were 100% (Table 5). For tractor logging, 57 observations of BMPs occurred. The implementation and effectiveness rates were also 100%. For roading, including the planning, construction, and maintenance of roads, 161 BMPs observations occurred. The implementation rate was 100% and the effectiveness rate was 98.8%.

TABLE 5. 1998 BMP IMPLEMENTATION AND EFFECTIVENESS. AERIAL, TRACTOR, AND ROADS

ACTIVITY	# OF BMP OBSERVATIONS	BMPS IMPLEMENTED	% IMPLEMENTATION	BMPS EFFECTIVE	% EFFECTIVE
Aerial Logging Systems	98	98	100	98	100
Tractor Logging	57	57	100	57	100
Roads	161	161	100	159	98.8
Total	316	316	100%	314	100%

The high rate of implementation and effectiveness is a function of the Forest changing to aerial logging systems, including helicopter logging, on the more difficult ground. Most of the tractor units are now located on gentle ground or near ridges that are away from streams. Roading systems are now being located on or near ridges and away from streams. The results of the audit indicate that BMPs are being applied on the Clearwater National Forest and they are effective in preventing sediment from entering stream channels. The following is a recommendation based on this audit:

- Obliterate, or place Road 417 in long-term intermittent use. To accomplish this, the upper Pete King Creek sediment traps will need to be cleaned and removed. Obliteration should include outslopping or water barring, restoring all stream crossings, and revegetating exposed soils. If Road 417 cannot be obliterated, than water barring or blading the road surface will be needed to control drainage. Also needed is rock buttressing of the fill over the Class I stream and revegetation of the fillslope.



In conclusion, the Clearwater National Forest is doing an excellent job at BMP implementation and effectiveness. It is actually a rare event when sediment is delivered from timber harvest and road construction activities to the stream.

## Item No. 11 – Site Productivity

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Frequency of Measurement: **Annual**  
Reporting Period: **Five Years**

### Monitoring Action

The Forest soil scientist will evaluate project sites for soil compaction, disturbance and other activities that may affect productivity.

### Accomplishments/Findings

In May 1999, the Post Office prescribed burn was surveyed to assess the impacts to the soil resource. A qualitative walk-through procedure was used to evaluate fire effects. The fire burned with a low to moderate intensity. The litter/duff layer remained intact across over 65% of the burned perimeter and no major areas of hydrophobic soils were observed. Due to the low burn intensity, little surface erosion was observed. The fire thinned smaller trees throughout the stand, removing mostly Douglas fir, grand fir, and some younger ponderosa pine trees. An assessment of soil surface disturbance, burn damage, soil displacement, and sedimentation to streams was made throughout the area. No significant impacts to the soil resource were observed. This site will be revisited in FY00 to determine if any impacts related to the burn activities have occurred since the initial monitoring.

In the summer of 1999, soil monitoring efforts were combined with the Idaho Forest BMPs. These audits assessed the implementation of practices designed to reduce the effects of management activities on watershed, fisheries, and soil resources. Units in the following timber sales were evaluated as to the impacts on the soil resource: Strychnine Intermediate, Upper Palouse, Burnt Bear, Cabin Country, Smith Saddle, and Deadman Salvage. An assessment of surface disturbance, compaction, burn damage, soil displacement, sedimentation to streams was made at each location. All units observed were in compliance with state BMP standards.





# TIMBER

## Goal

Provide a sustained yield of timber and other forest products to help support the economic structure of local communities and provide regional and national needs. Select on the ground those silvicultural systems that will be the most beneficial to long-term timber production, but modified as necessary to meet other resource and management area direction. Continue to work toward achieving the desired future condition identified in the Forest Plan.

## Strategy

The Forest will continue to manage the timber program to provide for the long-term health, diversity and productivity of the Forest. Complete site-specific analysis of the land base will be used to design the timber sale program. Silvicultural systems will be selected to build biological diversity and maintain ecological processes. The timber sale program will provide for a wide range of sale sizes and product types. An appropriate mix of logging systems will be specified. The Forest will make every effort to respond to the needs of the local communities that depend upon the Forest for their economic survival by continuing to pursue and develop new timber sale opportunities.

**TIMBER STAND INVENTORY** - The compartment inventory program, initiated in FY85, produces a comprehensive inventory and database representing all timber stands on the Forest. The compartment inventory looks at a geographic unit (average unit size is 10,000 acres) in three phases.

- ❑ In the first phase, aerial photographs are examined to identify areas that are relatively alike in size, tree density and species. *Phase one has been completed; all stands on the Forest have been mapped and identified for suitability and management area.*
- ❑ The second phase involves field stand examination of randomly selected stands. *Phase two has been completed on approximately 82% of the 173 Forest compartments.* No additional compartments were field sampled in FY99, however approximately 1,381 acres of project plot stand exams were accomplished, thereby increasing the numbers of stands with field inventories as well as adding to the pool of stand exams from which to match to unsampled stands.
- ❑ The third phase involves data compilation, then application of the data to unsampled stands. *The introduction in FY93 of the "Most Similar Neighbor Estimation Procedure" allowed the Forest to initially complete phase three on most of the timbered strata.* This procedure matches sampled stands to unsampled stands using photo-interpreted and physical characteristics of the stands. It will make timely, statistically unbiased estimates of the important characteristics for every stand on the Forest. Testing and validation of this process continues.



**FOREST PRODUCT SALES AND ASQ** - In FY99, the Forest offered a variety of products, including sawlogs, pulp, cedar products, firewood, Christmas trees, and fence posts. These products were sold through 12 timber sales and 1,251 miscellaneous collection permits. A total volume of 11.2 million board feet (MMBF) was sold. The majority of the sales were less than 2 MMBF and the Forest sold one sale larger than 2 MMBF. The annual volumes offered, sold, harvested and under contract since FY95 are shown in Table 1.

TABLE 1. ANNUAL TIMBER VOLUME OFFERED, SOLD, CUT AND UNDER CONTRACT (MMBF)

	FY95	FY96	FY97	FY98	FY99
<b>OFFER</b>	31.2	31.8	53.5	30.2	23.9
<b>SOLD</b>	11.5	40.6	38.7	37.1	11.2
<b>CUT</b>	58.9	25.0	42.0	34.4	16.3
<b>CONTRACT</b>	63.3	78.5	73.6	77.5	58.4



The total acres SOLD by harvest method during the past five years are shown in Table 2.

TABLE 2. TOTAL ACRES OF TIMBER SOLD ON THE FOREST BY HARVEST METHOD

	FY95	FY96	FY97	FY98	FY99
<b>Clearcut and Clearcut with Reserves</b>	158	323	269	187	315
<b>Shelterwood and Seed Tree</b>	101	639	679	668	738
<b>Final Removal</b>	89	607	351	0	606
<b>Selection</b>	0	83	5	314	8
<b>Intermediate Harvest</b>	846	3,754	3,314	2,840	1,936



Table 3 shows the volume of timber SOLD for the roaded and unroaded components of the Forest.

TABLE 3. ROADED AND UNROADED TIMBER SOLD

YEAR	ROADED SAWTIMBER	ROADED NIC	ROADED TOTAL	UNROADED SAWTIMBER	UNROADED NIC	UNROADED TOTAL	FOREST TOTAL
<b>88</b>	90	13	103	13	0	13	116
<b>89</b>	120	19	121	23	0	23	144
<b>90</b>	81	18	99	4	0	4	103
<b>91</b>	80	16	96	8	0	8	104
<b>92</b>	53	12	65	0	0	0	65
<b>93</b>	21	9	30	3	0	3	33
<b>94</b>	21	11	32	0	1	1	33
<b>95</b>	6	3	9	0	0	0	9
<b>96</b>	28	11	39	0	0	0	39
<b>97</b>	26	11	37	0	0	0	37
<b>98</b>	21	12	33	3	0	3	37.1
<b>99</b>	8.6	2.6	11.2	0	0	0	11.2

Table 4 compares the projected annual acres and volumes used to derive the annual ASQ, with the number of actual acres and volumes sold, by management area as defined in the Forest Plan.

TABLE 4. COMPARISON OF FOREST PLAN PROJECTIONS WITH ANNUAL ACREAGE OF TIMBER SALES, 1988-1999

	FOREST PLAN	FOREST PLAN	TIMBER SALE	TIMBER SALE
MANAGEMENT AREA	ACRES	VOLUME MMBF	AVERAGE ACRES	AVERAGE VOLUME MMBF
Timber Production	3,561	81.2	3132	51.1
Road/Trail Corridors	125	.8	44	.3
Big-Game Summer Range	3,099	62.5	39	.8
Big-Game Winter Range	1,007	23.6	484	8.6
Riparian Areas	3,516	5.2	76	1.5

The difference between planned ASQ volume and the average annual volume sold shown in Table 2 is mainly in the big-game summer range management area, most of which is located in the unroaded portion of the Forest.

## Item No. 18 – Harvested Land Restocked Within Five Years

Frequency of Measurement: **Annual**  
Reporting Period: **Five Years**



### Monitoring Action

The Forest silviculturist will prepare a report showing the percentage of stands and acres meeting the five-year regeneration standard. Data obtained from the Timber Stand Management Records System will provide the basis for determining the percentage of successfully regenerated stands.

### Accomplishments/Findings

The National Forest Management Act of 1976 requires that when trees are cut to achieve timber production objectives, the cuttings shall be made in such a way as to ensure that the technology and knowledge exist to adequately restock the land within five years after final harvest. Reforestation records pertaining to regeneration harvests that occurred in 1994 were compiled and the required percentages calculated. The data presented in Table 5 is based on the status of regeneration at the end of 1999. The time elapsed since harvest is five years. Seedcuts are not considered final harvests but because seedcutting initiates stand regeneration, the Forest monitors restocking success on the same basis as with the final harvests.

TABLE 5. 1994  
REGENERATION HARVESTS  
ADEQUATELY RESTOCKED  
IN FIVE YEARS

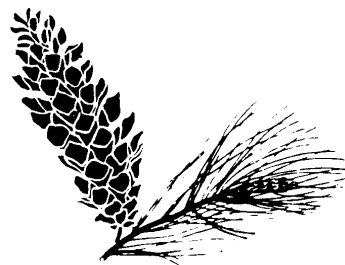
	Clearcut	Seedcut	Final	Selection	Total
Number of Stands	101	9	16	2	128
Number of Acres	1888	199	591	24	2702
Stand Success %	94%	89%	100%	100%	95%
Acres Success %	95%	92%	100%	100%	96%

Of the 128 stands that received regeneration harvesting in 1994, six clearcuts and one seedcut were not adequately restocked after five years. The initial planting failed to meet stocking standards in two clearcuts and the one seedcut. These stands are scheduled to be replanted in 2001. The lack of adequate stocking in four of the clearcuts is due to delays in carrying out the prescription for site preparation burning due to weather and poor burning conditions.

### Item No. 19 – Unsuitable Timberlands Examined to Determine if they have Become Suitable

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Frequency of Measurement: **Annual**  
Reporting Period: **Ten Years**



## Monitoring Action

Timberlands classified as unsuitable during development of the Forest Plan will be examined, using more exacting methods, to determine if they should be reclassified as suitable.

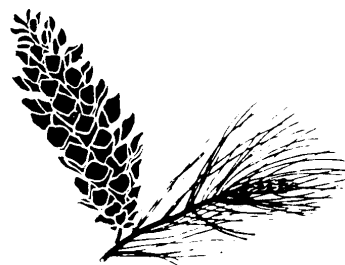
## Accomplishments/Findings

All timberlands, both suitable and unsuitable are currently being inventoried as part of the Forest's compartment inventory program. Occasionally, unsuitable timberlands may also be examined in association with an analysis of a proposed project. Both types of examinations are directed at confirming and refining the suitability determinations made in the Forest Plan.

### Item No. 20 – Validate Maximum Size Limits for Harvest Areas

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Frequency of Measurement: **Annual**  
Reporting Period: **Annual**



## Monitoring Action

The Forest silviculturist will prepare a table displaying the number of stands harvested by harvest type, meeting the 40-acre maximum harvest size standard compared to the number of stands exceeding this standard.

## Accomplishments/Findings

The maximum size of harvest openings created by even-aged regeneration harvesting (a method of harvest that results in a regenerated stand of similar age) should normally be less than 40 acres. Harvest opening size may exceed 40 acres when certain exceptional conditions apply such as insect outbreaks that threaten surrounding stands, catastrophic blowdown or for final removal of shelterwood trees in order to protect established regeneration in existing shelterwood and seedtree areas.

Table 6 shows the acres reported in the stand database for FY99.

TABLE 6. FY98 EVEN-AGED REGENERATION HARVESTS BY HARVEST TYPE AND SIZE CATEGORY

District	Clearcut & Clearcut with Reserves.		Seedtree & Shelterwood		Final Removal	
	#Stands <40 Acres	# Stands > 40 Acres	#Stands < 40 Acres	# Stands > 40 Acres	# Stands < 40 Acres	# Stands > 40 Acres
Pierce	2	0	30	3	20	2
Palouse	5*	0	*15	0	*6	*1
North Fork	0	0	0	0	0	0
Lochsa	1	0	0	0	1	0
Powell	9	1	1	0	0	0
<b>TOTAL</b>	<b>17</b>	<b>1</b>	<b>46</b>	<b>3</b>	<b>27</b>	<b>3</b>
<b>Average Size</b>	<b>15 Acres</b>	<b>59</b>	<b>13 Acres</b>	<b>47 Acres</b>	<b>15Acres</b>	<b>71 Acres</b>

\*The Palouse Ranger District's accomplishments include stands not reported in FY98 as well as FY99.

## Item No. 21 – Insect and Disease Status as a Result of Activities Harvested Land Restocked Within Five Years

Frequency of Measurement: **Annual**  
Reporting Period: **Five Years**

## Monitoring Action

Insect and disease status is evaluated during post-treatment stand exams. Silviculturists will use these exams in the preparation of silvicultural prescriptions to deal with identified insect and disease problems. Additionally, annual aerial detection surveys will be used to identify the limits of widespread insect and disease problems.

## Findings

There were no reports of insect or disease increases caused by management activities. Annual aerial detection surveys are used to assess current levels of insect and disease activity on the Forest. Areas with active insect outbreaks and recent forest fires are summarized and mapped. Many types of forest disease mortality, however, are not apparent from the aerial surveys and are not recorded. Because of this, reported losses from disease may not be complete.



Regular aerial detection surveys were conducted on the Forest in FY99. Mapping of current tree mortality occurred on all districts. Tree mortality caused by the Douglas-fir beetle increased significantly in FY99. The acres affected increased from 9,511 in FY98 to 9,031 acres in FY99: a decrease of 5%. However, recently killed Douglas-fir trees within these areas increased 130% from 11,287 trees in FY98 to 25,950 trees in FY99.

There was a significant increase in the acres infested with balsam wooly adelgid. Acres affected grew to 16,222 in FY99 from 9,564 in FY98: a 70% increase. The number of trees affected was estimated at 2,429 trees in FY99, but the number of subalpine fir trees killed by this insect was not counted in FY98 so no comparison can be made with tree numbers.

The decline of mature and old western redcedar caused by what is believed to be *Armillaria* root disease continues, producing trees with dead tops, dead branches, a reduced tree crown clustered around the tree bole and tree mortality. Monitoring will continue on this disease that appears to be slowly increasing.



# TRAILS

## Goal

Manage trails to provide for a variety of recreation experiences. Provide for safety, minimize use conflicts and prevent resource damage.

## Strategy

- *Public safety, use and resource considerations will be used to set trail work priorities.*
- *Identify relocation and construction needs,*
- *Manage an effective trail maintenance program.*
- *Maintain safe bridges.*
- *Manage an effective trail construction/reconstruction program.*

## Item No. 16 – Trail Management

Frequency of Measurement: **Annual**  
Reporting Period: **Five Years**

## Monitoring Action

The Forest trails coordinator will prepare a report annually that focuses on the status of the trail system, trail bridges, and the trail construction and reconstruction program. Reports from the INFRASTRUCTURE database will be reviewed to ensure this information is current.

## Accomplishments/Findings

**TRAIL MAINTENANCE** - Approximately 350 miles of snow trails are maintained annually. Three hundred of these miles are groomed for snowmobiles in Clearwater County using State of Idaho snowmobile funds. Two hundred of these miles are on national forest lands.

Table 1 provides information on accomplishments by maintenance level for the Forest's summer trail system. Maintenance levels for summer trails are defined as follows:

<p><b>Level I:</b> <i>minimum clearing minimum drainage work and no tread work</i></p> <p><b>Level II:</b> <i>brushing with some structure and tread work</i></p> <p><b>Level III:</b> <i>heavy clearing, tread repair, and construction of drainage structures</i></p>
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TABLE 1: MILES OF TRAIL MAINTENANCE ACCOMPLISHED\*

	1995	1996	1997	1998**	1999
<b>Level I</b>	817	641	950	710	773.05
Motorized			487	398	298.4
Non-Motorized			463	320	474.65
<b>Level II</b>	72	94	208	123	67.5
Motorized			147	76	34.2
Non-Motorized			61	47	33.3
<b>Level III</b>	116	257	100	84	31.1
Motorized			49	32	2.4
Non-Motorized			51	52	28.7
<b>TOTAL MAINTAINED</b>	<b>1,005</b>	<b>992</b>	<b>1,258</b>	<b>917</b>	<b>871.65</b>
Motorized			683	498	335
Non-Motorized			575	419	536.65

\*Wilderness trail accomplishments are located in the Wilderness section of the Monitoring Report.

\*\*Numbers for 1998 were changed; previous numbers were incorrect.

TABLE 2. TRAIL MAINTENANCE

<b>TRAIL MAINTENANCE LABOR TYPE</b>	1994	1995	1996	1997	1998	1999
<b>Force Account Maintenance (includes flood repair in 96 &amp; 97)</b>	431	287	510	623	246	329.3
<b>Volunteer Maintenance</b>	276	365	201	258	308	227.5
<b>Contract Maintenance</b>	300	353	446	377	363	314.8

## TRAIL RECONSTRUCTION

TABLE 3. 1999 TRAIL RECONSTRUCTION PROGRAM\*

<b>PROJECT</b>	<b>TRAIL NO.</b>	<b>MILES</b>	<b>COST *</b>
Tom Beal Creek	7	3.0	52,000
Reservoir-Elk River Falls	735	2.9	45,000
Clarke Mountain OHV	601, 998	30	85,000
Elmer Creek	96	1.5	12,000
Upper Northfork	373	6.5	68,000
Powell Complex	93	4.7	52,000
Pouliot	30	1.5	8,000
Survey & Design		na	53,000
<b>TOTAL TRAIL RECONSTRUCTION</b>		<b>50.1</b>	<b>\$375,000</b>
Johnny Creek	20 – 1.60		1,000
Storm Creek	50 – 09.40		6,000
Junction Mountain	106 – 00.0.		25,000
<b>TOTAL BRIDGES = 3</b>			<b>\$32,000</b>

\*Note: Cost included construction and contract administration





#### BRIDGE INSPECTION AND MAINTENANCE

- The current inventory lists 32 trail bridges on the Forest. Four bridges were inspected and four bridges maintained in 1999. The Warm Springs Bridge and Junction Pack Bridge had major repairs.

**SURVEYS** - In 1999, deferred maintenance surveys were performed on about 300 miles of trail: about 1/3 of the Forest system. Physical structures such as waterbars, puncheon, and switchbacks were counted. Log and prescription data was also recorded while doing many of these surveys.

**10% FUND** - In 1999, 46 miles of trail were cleared and had waterbars, culverts, and other erosion control structures installed. This work was accomplished through a number of resources, such as contracts and the inmate labor program.

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# WILD AND SCENIC RIVERS

## Goal

Protect and enhance the inherent values of existing designated Wild and Scenic Rivers and those being studied for possible future designation. Analyze and recommend suitability for classification of selected rivers to the Wild and Scenic system.

## Monitoring Action

- **Monitor ongoing projects for adherence to established protection measures.**
- **Manage existing scenic easements to standards defined in the Forest Plan.**
- **Improve access to rivers, facilities along their banks, and availability of interpretive information.**
- **Work with river floaters and Special Use Permittees to insure that the best available river experience is preserved.**

## Accomplishments/Findings

**SCENIC EASEMENTS** – One easement update highlighting easement administration was mailed to landowners and interested parties during 1999.

The scenic easement administration program involves coordinating and processing a variety of landowner proposals including: property redevelopment, timber harvest, outbuilding proposals, residence construction and residential vegetation removal. The easement review board met six times during the year regarding landowner and Forest Service proposals and to submit feedback. Other activities on the Wild and Scenic River corridor that the review board evaluated were plans for a satellite hatchery facility and a salvage sale on the Forest.

Several properties in the Wild and Scenic River corridor continue to be on the real estate market for the long term. Ownership turnover has been slow resulting in very few new landowners during 1999. Real estate agents continue to seek information from the Forest Service when they are working with potential buyers.

The corridor experienced its first property redevelopment introducing building concepts that stretch the image of agricultural and pastoral. The Forest Service is entering a new era in which the challenge is to maintain the character of the landscape and river corridor while working with landowners having different desires than those traditionally found in the river corridor.

**RIVER ADMINISTRATION** – Five outfitters operate on the Lochsa River under special use permit. One of the outfitters is focused on building a kayaking school while the others emphasize rafting.

Boating numbers for private and commercial boaters held steady overall for the 1999 Lochsa season. Cool spring weather and slow snowmelt contributed to prolonged high water. The river peaked just before Memorial Day weekend causing the holiday weekend to see far fewer boaters than in the past. Issues, such as highway safety and congestion and outfitter photography practices continue to raise hard questions for management.

The Clearwater and Nez Perce National Forests cooperated in sharing river rangers for the Lochsa patrol season. Using fee demo funds, the Lochsa Ranger District employed a river ranger for several weekends longer than in the past.

Two interpretive speakers, paid for through fee demo, presented programs to the river rangers, district personnel, and outfitters and guides. Both programs were well attended and provided an opportunity for partners to learn to know each other better.



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# WILDERNESS

## Goal

Maintain wilderness values both in existing wilderness areas and in those areas being recommended for wilderness classification. Provide for limiting and distributing visitor use in wilderness areas to allow natural processes to operate freely and to ensure integrity of values for which wilderness areas are created. Coordinate management of the wilderness with other national forests that share in the management of those lands.

### Item No. 5 – Wilderness

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Frequency of Measurement: **Annual**  
Reporting Period: **Annual**

## Monitoring Action

Note changes occurring within existing and potential wilderness areas and determine if they are affecting the wilderness character of the lands. Recommend management practices to correct adverse changes.

## Accomplishments/Findings

This report is a summary of the Clearwater National Forest's findings from the Selway-Bitterroot Wilderness (SBW) *"State of the Wilderness Report"*. The full report can be obtained from the Forest Supervisor's Office.

**MONITORING USE IMPACTS** - Based on Levels of Acceptable Change (LAC) monitoring and field inventory, the following identifies areas where Forest Plan standards are not being met. These are identified by Opportunity Class Areas. Opportunity Classes are used in the Forest Plan to delineate areas with different management goals. In general, Opportunity Class I provides the most primitive visitor experience with the least social encounters while Opportunity Class IV provides the least primitive visitor experience with the most social encounters.

Seven previously identified problem areas now meet opportunity class standards:

- **Colt Lake Basin (Opportunity Class II)**
- **Greystone Lake (Opportunity Class III)**
- **Little Dead Elk Trail 5 (Opportunity Class III)**
- **Long Lake (Opportunity Class IV)**
- **Maud Creek (Opportunity Class II)**
- **Trail 939 (Opportunity Class II)**
- **Upper/Lower Sponge Creek (Opportunity Class III)**

The rest of the basin sites will continue to move to Opportunity Class III by reducing the number of campsites, and lowering impact levels in the heavy and extreme sites. This decision was made to re-open areas after adequate recovery has occurred, to give wilderness users the chance to show their good stewardship commitments, and to also continue with the intent of the Forest Plan to move areas into compliance with the standards applied to their assigned Opportunity Class.

## OPPORTUNITY CLASS I ONE SITE WITH A LIGHT RATING

**CRAGS:** Campsite impacts at most sites in this area continue to improve. However, a new site developed at Dishpan Lake contains a large (500 sq. ft.) bare area from tree tying. Conditions at the Craggs Lakes are still far from Forest Plan standards; there are up to six sites per square mile and two moderate sites per square mile. One light site per square mile is desired. Sites showed less visitor use this year over last year. A volunteer "steward" is being recruited for next season to monitor use and impacts in the Craggs.

**COLT LAKE BASIN:** One site with a light rating is located in this area. The area is no longer out of standard.

**DUCK LAKE:** Two light sites in one square mile are in this area, which is unacceptable. The trend is static on these two sites. Duck Lake will be reviewed to determine how to remove one of the sites.

**JEANETTE LAKE:** This area is out of standard. Jeanette Lake has only one site, which has improved from a heavy rating in 1994 to a moderate rating in 1999; however, a light rating is required in this Opportunity Class. The trend in this area may be static to improving since Trail 902 will no longer be maintained.

**PORPHYRY LAKES:** This site has two lakes within one square mile with one site at each lake: an unacceptable standard for this class. The sites show an upward trend in rating but only one site per square mile is allowed. This area will be reviewed to identify ways to prevent further deterioration.

## OPPORTUNITY CLASS II TWO SITES; ONE MODERATE SITE PER SQUARE MILE

**MAPLE LAKE TRAIL 939:** These two sites show an upward trend. In 1992, one site had an extreme rating; the other site showed a heavy rating. In 1994, both sites had moderate ratings. In 1999, these two sites showed light ratings and are now within the standards of Opportunity Class II. The sites will be monitored to keep them within standards.

**CALIFORNIA LAKE:** This area is out of standard (one heavy, one moderate, and one light site). The trail heading into California Lake receives moderate stock use, and was cleared this year by volunteers. The trend in this area is static. Moose Creek sites, located on the south side of the ridge (south of California Lake), are old outfitter sites.

**HUNGRY LAKE:** One heavy site is located at Hungry Lake and has remained unchanged since 1994. This area is out of standard.

**LITTLE DEAD ELK SPRINGS:** This area is out of standard; three sites are located in one square mile. Two sites are moderate while one site is light. This area shows a slight improvement over all.

**MAUD CREEK:** The Maud Creek area is within standard for the first time with one moderate and one light site. These sites will be monitored to keep standards in check.

<p style="text-align: right;"><b>OPPORTUNITY CLASS III</b></p> <p><b>THREE SITES; TWO LIGHT, ONE MODERATE SITE PER SQUARE MILE</b></p>
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**CHAIN MEADOWS:** Two extreme, one heavy and one moderate site are located in this area. The Chain Meadows area will be evaluated in FY00 for proposal to improve conditions.

**GREYSTONE LAKE:** One moderate site is in this area, which repeats the 1994 evaluation. Impacts are static, and this area is in standard (no longer a problem area).

**JUNCTION TRAILS 211/644:** One site in this area is an old abandoned outfitter camp. Another site has improved from an extreme rating to a heavy rating, but still remains out of standard. Also, a new site was discovered on the far side of the meadow, which was not inventoried this year. Otherwise, this area shows an upward trend.

**LITTLE DEAD ELK TRAIL 5:** This area shows an acceptable improvement from two extreme sites in 1979, to two light sites in 1999. This site is well within the standards for Opportunity Class III.

**LOST KNIFE MEADOWS:** One extreme site and one light site are in this area. The extreme site is an old outfitter spike camp, which pushes this area out of standard. The trend is static.

**MAPLE LAKE:** The trend in this area is static. This area has four sites: one extreme, two heavy, and one light. The light site will be listed as a potential site this year. The Maple Lake area will be monitored to prevent further deterioration.

**ROBINSON'S MEADOWS:** Three sites are within one square mile - one heavy, one moderate, and one light. The heavy site is a long-established and well-developed stock site with excellent grazing opportunities that received high use this season, but the site causes this area to be out of standard. Trends remain static.

**SURPRISE CREEK:** This area is still out of standard due to the main campsite, which is very large with many damaged trees. This year it was left spotless but the stock-holding area is growing. Other sites where use occurred stayed the same. Sites that were not used show improvement. Wilderness rangers pass through this area frequently and give out low impact camping information.

**UPPER/LOWER SPONGE CREEK:** One moderate site, and one light site are located in this area. Since Trail #209 has not been cleared for eight years and was burned over in 1992, use has declined dramatically. Inventories show an upward trend, and this area is in standard (no longer a problem area).

WIND LAKES CREEK: Two moderate and two heavy sites are in this area. A downward trend exists.

<p style="text-align: right;"><b>OPPORTUNITY CLASS IV</b></p> <p style="text-align: right;"><b>FOUR SITES;</b></p> <p style="text-align: center;"><b>ONE HEAVY OR EXTREME, TWO MODERATE SITE PER SQUARE MILE</b></p>
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FISH LAKE: Four heavy sites and one moderate site are on this site, not including the administrative site and the outfitter camp behind the cabin, which were not rated this season. The old outfitter camp appears to be on an upward trend. Two IDAWA volunteers were stationed at the cabin for two weeks this summer, along with a Backcountry Horseman volunteer. The volunteers rebuilt the outhouse, moved the Fish Lake information sign, closed the old Trail 211, cleaned up campsites, talked with visitors, and cleaned out the shed. This area will be reviewed for future volunteer projects to improve conditions.

LONG LAKE: There are now one heavy and two moderate sites in this area. Long Lake meets Opportunity Class IV standards this year. As a result of restoration performed in 1997, tree damage at one of the popular campsites is recovering; visitors are using highlines.

**TRAIL MAINTENANCE ACCOMPLISHMENTS** - The following table identifies accomplishments by Opportunity Class. In general, trails in Opportunity Class IV are "*easiest*," trails in Opportunity Class III are "*more difficult*" and trails in Opportunity Class II are "*most difficult*." There are no trails in Opportunity Class I. Additional information regarding wilderness trail accomplishments is located in the TRAILS Section, including maintenance level definitions.

TABLE 1. SUMMARY OF TRAIL MAINTENANCE ACCOMPLISHMENTS BY OPPORTUNITY CLASS

	OPPORTUNITY CLASS IV (easiest)	OPPORTUNITY CLASS III (more difficult)	OPPORTUNITY CLASS II (most difficult)	TOTAL
Level I Maintenance	16.4	176.3	21.4	251.8
Level II Maintenance	7.0	19.0	0	5.0
Level III Maintenance	0	7.0	0	6.5
<b>TOTAL MILES MAINTAINED</b>	<b>23.4</b>	<b>202.3</b>	<b>21.4</b>	<b>263.3</b>
Miles in Opportunity Class	28.5	254	54.5	337
Percent of System Maintained	82%	85%	42%	78%

Note: Implementation of the Infrastructure database may have resulted in a slight inconsistency in total miles and total miles maintained this year when compared to previous years data.

<b>RECREATION</b>
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At Hidden Lake, two sites were naturalized. Stock sites were designated; tree wells were filled in, nails pulled, and highline trees signed by the Iowa Student Environmental Coalition (ISEC) in August.

At Seven Lakes, restrictions were modified to allow open grazing and dispersed camping at Rock Lake with grazing restricted within 200 feet from the lakeshore. Party size and number of stock would still be restricted to ten each. Restrictions would continue as currently ordered in the rest of the Seven Lakes Basin area.

The Lochsa Ranger District plans to restore the existing campsite at Rock Lake to meet the standards of Opportunity Class II. Annual monitoring of Rock Lake Basin will be conducted to ensure that a negative trend does not develop. If two consecutive years of unacceptable resource damage occur, the site will be restricted again.

## CONSERVATION EDUCATION AND MANAGEMENT OF HIGH USE AREAS

The District again offered the "*Skills Trail*" to area students. Next year the program will be aimed at 5<sup>th</sup> grade instead of 6<sup>th</sup> grade.

Forest Service employees staffed the Elk Summit cabin on weekends. This cabin was used as a wilderness portal and provided information on minimum impact use and trail conditions.

A volunteer of the Backcountry Horsemen of North Central Idaho helped with maintenance at Fish Lake cabin, and built two puncheon bridges on Trail 220 leading into the Selway-Bitterroot Wilderness.

Two IDAWA volunteers were stationed at Fish Lake airfield for two weeks. They helped with maintenance of the buildings, provided information on bull trout, cleaned campsites, restored trails, recorded visitor use, and provided low impact messages for pilots.

One IDAWA volunteer was stationed at Seven Lakes for two weeks and cleared trail, cleaned up campsites, and worked with visitors for better low impact practices.

A group of 13 Iowa Student Environmental Coalition students and teachers worked at Hidden Lake and Hang Tough campsite for one week. They filled in tree wells, planted trees and shrubs, restored campsites, and cleared trail.

## VEGETATION

Wilderness rangers and volunteers pulled knapweed along the Boulder Creek Trail and at Bat Hill in June, July and August. Sulphur cinquefoil was discovered at Huckleberry Flat.

Wilderness Rangers and volunteers pulled Canada thistle and hounds tongue at Stanley Hot Springs, and sulphur cinquefoil along the Boulder Creek trail.

Volunteer teachers from Iowa pulled knapweed at Huckleberry Flat.

A small new infestation of tansy was pulled at Huckleberry Flat.

## TRAIL MAINTENANCE ACCOMPLISHMENTS

The following table identifies accomplishments by Opportunity Class. In general, trails in Opportunity Class IV are "*easiest*," trails in Opportunity Class III are "*more difficult*" and trails in Opportunity Class II are "*most difficult*." There are no trails in Opportunity Class I. Additional information regarding



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Miles in Opportunity Class	28.5	254	54.5	337
Percent of System Maintained	82%	85%	42%	78%

Note: Implementation of the Infrastructure database may have resulted in a slight inconsistency in total miles and total miles maintained this year when compared to previous years data.

## SOIL, WATER AND AIR

Water temperature monitoring was conducted in Boulder, Old Man, Big Stew, Surprise, Rock Lake, and Huckleberry Creeks.

## ADMINISTRATIVE SITES

The outhouse was rebuilt at Fish Lake, repairs were made to the cabin, and the visitor information signs were relocated to a drier spot. Work was accomplished with the assistance of volunteers.

## LAW ENFORCEMENT

Four violations occurred at Seven Lakes in 1999: grazing during the grazing closure period, littering, tying stock to trees outside of designated stock containment areas, and damaging vegetation by tying stock to trees in a designated campsite. Incident reports were filed, as violators were not found.

REPORTS IN THE WILDERNESS AREA	
Number of incident reports written	<b>8</b>
Number of warning notices written	<b>0</b>
Number of violation notices written	<b>0</b>

## PRESCRIBED NATURAL FIRE

Information regarding the prescribed natural fire program in the Selway Bitterroot Wilderness is located in the FIRE section of this report.

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# WILDLIFE

## Goal

Manage and provide habitat that will support viable populations of all resident wildlife species. Maintain and enhance big-game winter and summer habitat to support a huntable population of elk, deer and moose. Manage habitat to contribute to the recovery of each threatened and endangered species on the Forest.

Maintain or enhance biological diversity to the extent practicable and consistent with overall objectives of multiple use so that it is at least as great as that of a natural (unmanaged) forest.

## Strategy

Monitor the effects of Forest activities on preservation and enhancement of biological diversity and provide biological input to proposed management activities.

Each year improve approximately 2,300 acres of winter big-game habitat using a variety of methods such as prescribed fire, fertilization, slashing, logging, and seeding. Use road closures and modification of timber sale design, layout and scheduling to maintain or enhance elk summer habitat.

Review, coordinate and consult with the USF&WS on all projects that involve impacts to threatened and endangered species. Conduct biological assessments for all projects where threatened and endangered species may occur. Recommend practices to lessen or mitigate adverse effects of projects and ensure viable populations or promote the recovery of all listed species.

Continue to inform and provide the public with current information on the programs and status of wildlife habitat management on the Forest.

### Item No. 7 – Provision for Plant and Animal Diversity

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Frequency of Measurement: **Annual**  
Reporting Period: **Five Years**

## Monitoring Action

Monitor the effects of Forest activities to maintain and enhance plant and animal diversity.

## Accomplishments/Findings

A wide variety of plant and animal habitats currently exist and are well represented on the Clearwater National Forest. The exception is old growth or late successional habitat. A status report is prepared and updated annually to display the amount and distribution of old-growth habitat. This report is complete and is available upon request at the Supervisor's Office.

The Forest is continuing to meet the Forest Plan standard of maintaining at least 10% of the Forest in old-growth forest condition. The 1998 *"Old Growth On the Clearwater National Forest Status Report"* states that there is 11% old growth on the Forest.

### Item No. 25 – Big-Game Habitat Improvement

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Frequency of Measurement: **Annual**  
Reporting Period: **Annual**

## Monitoring Action

Areas being treated will have monitoring plans developed.

## Accomplishments/Findings

The Clearwater Basin Elk Habitat Initiative (CEI) was developed in FY98. This initiative is a cooperative effort in the Clearwater basin to improve elk habitat with an emphasis on the use of prescribed fire and other forest practices. Cooperators are the Clearwater and Nez Perce National Forests, Idaho Department of Fish and Game, the Army Corps of Engineers, Potlatch Corporation, the Rocky Mountain Elk Foundation and the Idaho State Department of Lands. A citizens group was formed to help cooperators implement projects and advise managers. A basin-wide analysis of habitats and treatments is ongoing. Some prescribed fire projects were implemented in FY98 in cooperation with RMEF. A memorandum of understanding and charter was developed to help cooperators coordinate management and public involvement. The long-range goal is to restore declining habitat conditions.



On the Clearwater National Forest, the Big Game Habitat Restoration on a Watershed Scale (BHROWS) project was developed to improve the health of the ecosystem and habitat for elk on 840,000 acres of the North Fork Ranger District. This project is an outgrowth of the CEI project.

### WINTER AND SUMMER RANGE

Several projects using fire and timber harvest as habitat management tools were completed in FY99 in the North Fork Clearwater River basin.

EAST BRIDGE TIMBER SALE AND PRESCRIBED BURN – Approximately 900-1300 acres of the East Bridge Creek drainage on the Lochsa River, primarily in elk winter range, have been approved for habitat

improvement using timber harvest as the management tool. Timber harvest will be followed by under burning, which will thin or regenerate timber stands infected with toot diseases, and regenerate shrubs over about 785 acres. The Lochsa Ranger District treated an additional 200 acres in FY99 with prescribed fire. The Rocky Mountain Elk Foundation (RMEF), the National Fish & Wildlife Foundation, and the Forest Service provided funding.

**LIGHTNING CREEK PRESCRIBED BURN** – A ponderosa pine stand in the Pot Mountain country received a prescribed burn in early September 1999. This burn was designed to reduce an understory of firs that were slowly taking over the pine stand. Summer range elk forage will be improved on about 825 acres as shrubs replace the firs in the understory. The North Fork Ranger District accomplished this project; the RMEF and the Forest Service provided funding.

**BEAR/SKULL CREEK PRESCRIBED BURN** – This project is similar to Lightning Creek and was ignited about the same time in Bear Creek, a tributary to Skill Creek in the North Fork Clearwater River drainage. The North Fork Ranger District treated about 750 acres; the RMEF and the Forest Service provided funding.

### WILDFIRES MANAGED FOR RESOURCE BENEFIT

Elk forage is lacking in many areas; effective fire suppression has eliminated the disturbances that recycled forests into shrub fields. In certain areas where fire plans have been developed, fires can be managed instead of being fully suppressed if they are expected to produce a benefit to resources, including elk. Fires in designated wilderness areas are also regularly managed as natural processes, and they often benefit elk habitat as well. Each fire is evaluated shortly after its discovery and a decision to suppress or manage the fire is made depending on weather, fires location and vegetation conditions. Resource benefit fires are monitored and re-evaluated daily to determine if they are still procuring desired results and may be suppressed if they are not.

In 1999, the Clearwater-Nez Perce fire zone managed over 50 fires for resource benefit instead of suppressing them. There were 39 fires located in the Selway-Bitterroot, Frank Church – River of No Return, and Gospel Hump Wilderness areas. Weather and all-time record burning conditions in late July and early August led managers to suppress some fires that might have been managed for resource benefit in a more typical year. This managed fire program is expected to produce forage benefits in the future.

**UPPER TWIN CREEK** – This fire was discovered August 4, 1999 on the North Fork Ranger District. It is notable as the first non-wilderness fire managed for resource benefit, though it never reached any appreciable size.

**SWEET 70** – This fire, in Upper Twin Creek on the North Fork Ranger District, was discovered September 19, 1999. It was managed for resource benefit until it went out in early November. It burned nearly 700 acres; the majority of these acres were located in elk winter range.

**POTATO** – The Potato fire, caused by lightning on August 27, 1999 is located in the upper reaches of Potato Creek on the North Fork Ranger District. This fire burned approximately 300 acres.

**OTHER RESOURCE BENEFIT FIRES** – Several other fires occurred in the Selway-Bitterroot Wilderness area and were managed for resource benefit. Only one of these fires was located on the Clearwater National Forest: the Colt Killed fire, located ten miles southeast of Powell, burned 1,375 acres.

## Item No.'s 26-35 – Population Trends of Management Indicator, Threatened and Endangered Species

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Frequency of Measurement: **Annual**  
Reporting Period: **Annual**

### Monitoring Action

Reports will be prepared on these species focusing on population trends and effects of management of these species.



### Accomplishments/Findings

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#### MANAGEMENT INDICATOR SPECIES

The following species were selected for inclusion in the Forest Plan as indicator species: elk, moose, white-tailed deer, pileated woodpecker, goshawk, pine marten, and all Threatened and Endangered plant and animal species.

**ELK** - Based on information from the Idaho Department of Fish and Game (IDFG) big game surveys, the elk population on the Clearwater National Forest is estimated at 11,000. Winter conditions during FY98 were mild. The elk population remained static or slightly increased from the effects of the very severe winter conditions in FY97, which resulted in approximately a 50% reduction in elk population. The trend in the overall population the past five years has been a sharp downward movement. Elk numbers were estimated by the Idaho Fish & Game to be around 20,000 in 1994.

**MOOSE** - Approximately 1,200 moose inhabit the Forest based on IDFG estimates. Harvest has remained stable. The Powell Ranger District continues to support habitat for approximately 75% of the moose population on the Forest. The trend in moose population over the past five years is stable.

**DEER** - Approximately 5,000 white-tailed deer inhabit the Forest according to the IDFG. Annual harvest has remained stable. Implementation of management practices to mitigate impacts on elk, riparian areas and old-growth habitat will benefit overlapping white-tailed deer habitat. The trend in deer population over the past 5 years is stable.

**PILEATED WOODPECKER, GOSHAWK, AND PINE MARTEN** - These three species were selected as indicator species for monitoring a variety of old-growth habitat across the Forest. Trends in population numbers are correlated with overall old-growth acres maintained on the Forest as directed in the Forest Plan. A stable population of pileated woodpeckers and goshawks were commonly observed across the Forest and coincide with maintenance of old-growth habitat.

Pine martens are very common in higher elevations and continued to be trapped with no limits or harvest restrictions being considered. The pine martin population is considered to be stable based on maintenance of

old-growth habitat and annual authorization of commercial trapping by IDF&G. A cooperative program was initiated with Potlatch Corporation to offer a monetary reward to individuals for reporting the location of active goshawk nests that could be confirmed by a biologist. Six new nest sites were reported in the Clearwater basin as a result of this program.

**GRAY WOLF (EXPERIMENTAL/NON-ESSENTIAL)** - Wolves have been reintroduced into North Central Idaho in 1997. Currently, 7-10 wolves inhabit the Clearwater National Forest. The Nez Perce Tribe is responsible for monitoring and coordinating wolf recovery efforts in Idaho. Recovery goals are being met more rapidly than expected with the possibility of de-listing being considered. Trends in numbers are expected to increase as young adults disperse from existing packs and populate un-occupied suitable wolf habitat.

**BALD EAGLE (THREATENED)** - The bald eagle occurs only as a winter resident in the Clearwater basin. Approximately 60 bald eagles winter in the Clearwater basin and its tributaries. Biologists from the Forest work on the National Wildlife Federation's annual bald eagle survey each January. Most of the bald eagle habitat is found along major watercourses. Recovery goals for the bald eagle have been exceeded for the past 5 years. Delisting is being considered. A trend in numbers of bald eagles over the past 5 years is stable based on incidental observations and annual surveys.

**GRIZZLY BEAR (THREATENED)** - A decision to draft an EIS dealing with grizzly bear recovery in North Central Idaho was made by the Interagency Grizzly Bear Committee during FY96. Interim direction for dealing with grizzly bear habitat has been issued until the EIS is finalized. Public comments were analyzed during FY98 and will be included in the final EIS. Existing populations of grizzly bear on the Forest are unknown at this time. Occasional unconfirmed sightings have been reported in the higher elevations of the eastern portions of the forest.

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## THREATENED PLANT SPECIES

No new plant species were listed in FY99.

**WATER HOWELLIA (HOWELLIA AQUATILIS)** - Water howellia is an aquatic plant found in glacial potholes and oxbow sloughs where water is present in the spring, but dries up by late summer. It is generally found in shallow water or the edges of deeper ponds in Engelmann spruce or lodgepole pine cover types. This species is known to occur as an anomaly in a stock pond in Latah County. There is no known suitable habitat for water howellia on the Forest at this time due to lack of suitable aquatic habitat.

**UTE LADIES'-TRESSES (SPIRANTHES DILUVIALIS)** - The U.S. Fish & Wildlife Service (USF&WS) added this species to the Clearwater National Forest's bi-annual forest wide list, [USF&WS 1-9-98-SP-100, dated March 2, 1998]. Based on information from the Boise office of the USF&WS (Section 7 Guidelines, given to the Clearwater and Nez Perce National Forests, dated 2/4/1998), this species is thought to be a marginal Great Basin species. A review of this specie's habitat (per ICDC, Montana Natural Heritage and Washington Natural Heritage records) indicates this species to be found in wetland habitats in a physiographic setting of large, low gradient valley bottoms. Other typical habitats include transition areas where river systems leave high gradient, mountainous settings and enter shrub (sagebrush, greasewood, bitterbrush) or grassland-steppe physiographic settings. Plants are nearly always in low gradient, alluvial valleys, open, grass dominated wet meadows, shrub or deciduous tree (i.e. cottonwood) riparian areas. Soils are often alkaline or periodically flooded alkaline flats, adjacent to lowland lakes.

The best information available indicates this species has not been found in

- **1) high gradient, western redcedar/western hemlock riverine, riparian systems;**
- **2) boreal riparian plant communities dominated by subalpine fir, spruce or mountain hemlock; or**
- **3) cold, boreal sedge or sphagnum moss dominated peatlands or subalpine meadows.**

Existing habitat information does not substantiate the presence of this species in upland, high gradient, densely shaded, conifer dominated riparian systems, or subalpine communities. Botanists feel that if this species were present in northern Idaho, it would be in alluvial bottomlands, generally less than 3,000' elevation, with open, mixed conifer and deciduous (i.e. cottonwood), grass and shrub mosaic communities, along major river systems or adjacent to lowland lakes.

The Clearwater National Forest will continue to conduct surveys of high potential habitats during the blooming period (late July - September) and follow standard Threatened and Endangered Species protocols (FSM 2670). Proposed projects in the steppe zone habitat types in the Palouse Prairie or canyon grasslands should be evaluated as potential habitat. Most of the Forest would not be considered suitable habitat for this species. Currently, Montane coniferous forest, subalpine coniferous forest, and alpine zones are not considered suitable habitat.

## APPEALS AND LITIGATION

There are two parts to this section, a listing of individual project level appeals on the Clearwater National Forest, and a listing of the lawsuits in which the Forest is currently involved.

**PROJECT LEVEL APPEALS** - The Forest received fifteen new project appeals on ten projects during FY99. The following table presents the status of these appeals.

PROJECT NAME	APPELLANT	STATUS	MAJOR APPEAL ISSUES
Shoot Creek Timber Sale EA	The Ecology Center, et al. American Wildlands Forest Guardians, et al.	Decision Upheld by Regional Forester	Size of Opening Cumulative Effects Management Indicator Species
Wepah-Pup Timber Sale EA	Friends of the Clearwater, et al	Decision Upheld by Regional Forester	Cumulative effects Range of Alternatives
Dutchman Salvage Timber Sale	Friends of the Clearwater, et al	Decision Withdrawn by District Ranger - Reissued later in the year	Water Quality Cumulative Effects Roadless Areas Inappropriate use of CE
5201 Salvage Timber Sale	Friends of the Clearwater, et al	Decision Upheld by Regional Forester	Inappropriate use of CE Extraordinary Circumstances Inappropriate use of CE
5028 Salvage Timber Sale	Friends of the Clearwater, et al	Appeals Dismissed by Regional Forester	Economic Analysis Roadless Areas
Musselshell EIS	Friends of the Clearwater, et al Nez Perce Tribe Resource Organization on Timber Supply (ROOTS)	Decision Upheld by Regional Forester	Water quality and fisheries Treaty rights to take fish Supplement to EIS Old growth
East Bridge Timber Sale	Friends of the Clearwater, et al	Decision Upheld by Regional Forester	Range of alternatives Water quality Inappropriate use of CE
Grave Thinning Timber Sale	Friends of the Clearwater, et al	Decision withdrawn by District Ranger	Water quality and fisheries analysis
Bugkill Salvage Timber Sale	Friends of the Clearwater, et al	Decision withdrawn by District Ranger	Inappropriate use of CE
Yellow Pine Restoration Timber Sale	Friends of the Clearwater, et al The Ecology Center, et al.	Decision Upheld by Regional Forester	Violation of the Clean Water Act Violation of the Settlement Agreement Impacts to wildlife



**LITIGATION** - The Forest was involved in one lawsuit during FY99. The following table presents the current status of this lawsuit.

<b>TOPIC OF LAWSUIT, PLAINTIFFS AND DEFENDANTS</b>	<b>STATUS</b>	<b>MAJOR ISSUES</b>
<i>Bull Trout</i> Friends of the wild Swan v. Regional foresters, R1 and R4	District Court Decision in Favor of the Forest Service. Appealed to the 9 <sup>th</sup> Circuit Court. In 1999 Plaintiffs voluntarily dismissed their appeal. Case closed.	Alleged failure to provide for viable populations of bull trout.
<i>Forest Plan Implementation</i> Wilderness Society, et. al. v. Regional Forester, R1 et. al.	Documentation being prepared for the Court. Hearing expected in FY00.	Alleged failure to meet Forest Plan standards for old growth. Alleged failure to supplement the Forest Plan due to the effects of the flooding event of 1995-1996. Alleged violation of 1993 Settlement Agreement. Implementation of the White Pine and Fish Bate Timber Sales.

Shortly after the beginning of FY99, the Clearwater National Forest was notified of intent to file another lawsuit. However, no new lawsuit was filed in FY99.

## IMPLEMENTED CHANGES

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### ECOSYSTEM MANAGEMENT

The Forest continued with the implementation of Ecosystem Management concepts and principles when designing projects. The final EIS for the North Lochsa Face project has been released with a Record of Decision expected to be released in FY00.

Extension of PACFISH and INFISH interim management direction provides further management direction for all projects on the Forest.

The Forest has developed a proposed forest-wide schedule of priorities of watersheds for completing Ecosystem Analysis at the Watershed Scale. Copies were sent to Idaho Department of Fish and Game, U.S. Fish and Wildlife Service, National Marine Fisheries Service, U.S.E.P. Agency and the Nez Perce Tribe.

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### FOREST PLAN REVISION

Forest Plan revision procedures are under review. Procedures to link plan revision to the findings and any decisions from the Interior Columbia River Basin Ecosystem Management Project are being developed.

Efforts in FY99 largely centered on continuation of completing needed data layers in the Geographic Information System (GIS) and ongoing ecosystem assessments of subbasin watersheds.

Until the revision of the Forest Plan is completed, the current Forest Plan, as amended, remains as the guiding document for the Forest. The Forest continues to incorporate the four "*interim measures*" or exceptions that were agreed to in the Settlement Agreement (Wilderness Society, et al v. Robertson, 1993). Funding of the Forest Plan Revision effort continues to be a serious problem.

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### AMENDMENTS

AMENDMENT NO. 22 – adds water quality objectives for Little Sand Creek. Page K-5 in Appendix K of the Forest Plan is updated to reflect this change. The need for this change was identified during the environmental analysis for the Yellow Pine Restoration Timber Sale conducted by the Palouse Ranger District.

## PLANNED ACTIONS

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### Introduction

This section identifies actions slated for 2000 and beyond, in the following order.

- **(1) Discussion of the Large Scale Area Assessment Documents**
- **(2) Discussion of Clearwater National Forest Ecosystem Management Documents**
- **(3) Steps in the Revision of the Forest Plan**
- **(4) Amendments that may be Proposed to the Current Forest Plan**
- **(5) Discussion of Projected Budget (Appendix C in the Forest Plan)**
- **(6) List of other Activities Planned in FY00**

**1) AREA ASSESSMENT DOCUMENTS - Interior Columbia Basin Ecosystem Management Project -** The Forest received copies of the *Upper Columbia River Basin Draft Environmental Impact Statement Volumes I and II*. This document presents alternative ways to develop and implement a coordinated scientifically sound ecosystem-based management strategy for the Forest Service and the Bureau of Land Management lands in the Upper Columbia River Basin. Copies are available from the project office in Walla Walla, Washington (509-522-4030) or Boise, Idaho (208-334-1770). A Supplemental EIS (SEIS) will be available for public comment in the spring 2000. After public comments on SEIS have been analyzed, a Record of Decision will be signed. The web site for the Interior Columbia Basin Project is <http://icbemp.gov>. The web site for the Upper Columbia Basin Project is [http://icbemp.gov/html/ucrb\\_eis.html](http://icbemp.gov/html/ucrb_eis.html).

**2) ECOSYSTEM MANAGEMENT DOCUMENTS - Clearwater National Forest Ecosystem Management Documents** - The Forest completed an ecosystem assessment of the North Fork Clearwater Subbasin in FY99. Copies of the assessment report are available at the Clearwater National Forest Supervisor's Office in Orofino, Idaho (208-476-4541, contact George Harbaugh). Procedures for updating the Forest vegetation and land system inventory databases are established and in use. Procedures for conducting broad-scale ecosystem analysis are better understood and being used to guide the Forest's ecosystem analysis projects.

Assessments for the Clearwater, the Lower and Upper North Fork Clearwater, and Palouse River sub basins have been completed. The subbasin assessment of the Lochsa River will be completed in 2000. This will complete all subbasin assessments.

**3) STEPS IN THE REVISION OF THE FOREST PLAN FOR THE CLEARWATER NATIONAL FOREST** - The regional strategy for completion of revision of Forest Plans is to have this done as required by law. The law states they are to be revised within 10-15 years from when they were signed. The completion date for the Clearwater National Forest is no later than 2002. Current strategies for completion of all Region One Forest Management Plans will focus on the Idaho-Panhandle, Kootenai, Lolo, Bitterroot, and Flathead National Forests. Possible strategies may need to be re-aligned to stay within projected budget and workforce capabilities.

As agreed under the terms of the Forest Plan lawsuit settlement, the Forest has filed a *Notice of Intent (NOI)* in the Federal Register in March 1995 announcing the intent to revise the Forest Plan. This revision process will be done in conjunction with the Region One revision strategy and available budget.

**4) AMENDMENTS THAT MAY BE PROPOSED TO THE CURRENT FOREST PLAN** - Following are some of the proposed Forest Plan amendments that may be expected in FY00.

- **AMENDMENT NO. 20** - Within the North Lochsa Face planning area, this proposed amendment would change the maximum number of acres that a wildfire is expected to exceed. Currently, each management area has a set number of acres that a wildfire is not to exceed. This amendment would change that set number to an unscheduled acreage. Each wildfire would be analyzed individually, to balance the values in that area with the cost to suppress that fire to determine a maximum fire size. The need for this change is identified in the North Lochsa Face Analysis document conducted by the Lochsa Ranger District.
- **WEST FORK POTLATCH WATER QUALITY AMENDMENT** - Preliminary analysis indicates there may be a need to update the water quality standards for several creeks in this drainage. The need for change will be based on a site-specific analysis conducted by the Palouse Ranger District and documented in the *West Fork Potlatch Final Environmental Impact Statement and Record of Decision*.
- **OTHER AMENDMENTS** - Throughout 2000, several other project-specific amendments are expected to be identified as analysis continues or is initiated on other projects.

**5) PROJECTED BUDGET (APPENDIX C OF FOREST PLAN)** - As implementation of the Forest Plan continues, actual dollars versus projected dollars are continually adjusted. Instead of amending the Forest Plan, Table 2 under "ECONOMICS" displays this information annually.

## 6) OTHER PLANNED ACTIVITIES

<b>EFFECTS</b>	<ul style="list-style-type: none"> <li>• The Clearwater Elk Recovery Team is working on an EIS to address problems and find solutions to the elk decline in the North Fork Clearwater subbasin.</li> </ul>
<b>FISHERIES</b>	<ul style="list-style-type: none"> <li>• Follow-up monitoring regarding selected instream areas in the Lower Lochsa River area will be conducted in 2000 to validate 1999 survey results, and to locate any erosion sources that need rehabilitation.</li> </ul>
	<ul style="list-style-type: none"> <li>• Surveys for habitat monitoring on the Lochsa River are scheduled for 2000 and 2002.</li> </ul>
	<ul style="list-style-type: none"> <li>• Multiple surveys on streams in the North Fork Clearwater watersheds are scheduled in 2000.</li> </ul>
	<ul style="list-style-type: none"> <li>• The Nez Perce Tribe will complete a report on the study to assess genetic status of westslope cutthroat trout populations throughout the North Fork Clearwater River drainage.</li> </ul>
	<ul style="list-style-type: none"> <li>• The <b>High Mountain Lake Fisheries Project</b> has been completed. However, additional monitoring of selected lakes will continue.</li> </ul>
<b>LANDS</b>	<ul style="list-style-type: none"> <li>• Completion of the <b>Beaver/Butter N Eggs Cleanup Land Exchange</b> with the Potlatch Corporation is expected in early FY00.</li> </ul>
	<ul style="list-style-type: none"> <li>• A NEPA document for the <b>Pits Exchange</b> will be prepared. This land exchange should be completed in the fall/winter 2000.</li> </ul>
<b>RECREATION</b>	<ul style="list-style-type: none"> <li>• In 1998-99, the Lolo National Forest restricted use of snow machines in the Great Burn roadless area in Montana. The Clearwater and Lolo National Forest will jointly monitor snow machine use in the Idaho area of the Great Burn roadless area in FY00.</li> </ul>
<b>RIPARIAN AREAS</b>	<ul style="list-style-type: none"> <li>• Blake's Fork, in the Palouse River basin is scheduled for monitoring again in 2002.</li> </ul>
<b>TIMBER</b>	<ul style="list-style-type: none"> <li>• In May 1999, the Post Office prescribed burn was surveyed to assess the impacts to the soil resource. No significant impacts to the soil resource were observed. This site will be revisited in FY00 to determine if any impacts related to the burn activities have occurred since the initial monitoring.</li> </ul>
<b>WILDERNESS</b>	<ul style="list-style-type: none"> <li>• The Lochsa Ranger District plans to restore the existing campsite at Rock Lake to meet acceptable standards of Opportunity Class II.</li> </ul>
	<ul style="list-style-type: none"> <li>• In 2000, twelve lakes in the Selway-Bitterroot Wilderness area are planned for fish stocking.</li> </ul>
	<ul style="list-style-type: none"> <li>• In 2000, the Idaho Department of Fish and Game plans to submit a proposal to introduce Tiger Muskies into streams in the Selway-Bitterroot Wilderness area. In 2001, the IDF&amp;G plans to implement this project, aimed to remove brook trout.</li> </ul>
	<ul style="list-style-type: none"> <li>• The Chain Meadows area will be evaluated in FY00 for proposal to improve conditions.</li> </ul>

## LIST OF FOREST CONTACTS

NAME	TELEPHONE	RESOURCE AREA
Duane Annis	476-4541	Recreation/Resources
Jerry Arsena	476-8359	Report Manager, Planning
Anne Connor	476-8235	Civil Engineer
Dan Davis	476-8353	Wildlife Biologist, Range Specialist
John Keerseemaker	476-8338	Staff Officer, Ecosystem Management
Mark Hill	476-8350	Heritage Program, Archaeologist
Kent Gilmore	983-1950	Dispatch Coordinator
Doug Gober	476-8223	District Ranger, Pierce Ranger District
Thelma Gober	476-8232	Writer/Editor
Doug Gochmour	476-8355	Staff Officer, Ecosystem Planning
Bill Jones	476-8315	Forester, Lands
Cheri Jones	942-3113	Recreation Forester
Diana Jones	476-8239	Landscape Architect
Richard Jones	476-8274	Hydrologist
John Kasza	476-8297	Civil Engineer
Rollin Kehlet	476-4541	Trails Coordinator
Lisa Klinger	926-4274	Scenic Easement Administrator
Jim Mital	476-8348	Forest Ecologist
Clifford Mitchell	476-8278	Forest Planner
Cindy Lane	926-4274	District Ranger, Lochsa Ranger District
Larry Ross	875-1131	District Ranger, Palouse Ranger District
Ed Lozar	476-8286	Planning
Pat Murphy	476-8213	Fisheries Biologist
Elayne Murphy	476-8200	Public Affairs, Staff Officer
William Wulf	476-8264	Silviculturist

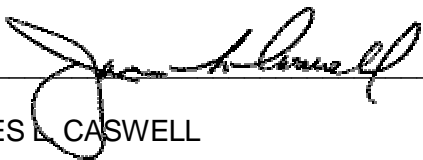
## FOREST SUPERVISOR APPROVAL

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### APPROVAL

I have reviewed this annual Forest Plan Monitoring and Evaluation Report for FY99. This report meets the intent of the Forest Plan (Chapter IV) and 36 CFR 219. I have also considered the recommendations of my staff on proposed changes to the Forest Plan. Amendments needed to keep the Forest Plan current will be implemented only after appropriate participation and analysis.

This report is approved.



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JAMES L. CASWELL

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June 5, 2000

Date